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DUPLICATE

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UGANDA PROTECTORATE.

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**ANNUAL REPORT**

OF THE

**DEPARTMENT OF AGRICULTURE**

FOR THE

YEAR ENDED 31ST DECEMBER, 1922.

---

Published by Command of His Excellency the Governor.

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ENTEBBE,  
PRINTED BY THE GOVERNMENT PRINTER, UGANDA.

1924.







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# UGANDA PROTECTORATE.

## DEPARTMENT OF AGRICULTURE.

|                                             |     |     |     |         | <i>P. O. Box</i> | <i>Telephone</i> |
|---------------------------------------------|-----|-----|-----|---------|------------------|------------------|
|                                             |     |     |     |         | <i>No.</i>       | <i>No.</i>       |
| HEAD OFFICE                                 | ... | ... | ... | Kampala | 53               | 15               |
| MYCOLOGICAL OFFICE AND LABORATORY           | ... | ... | ... | Kampala | 5                | 26               |
| ENTOMOLOGICAL OFFICE AND LABORATORY         | ... | ... | ... | Kampala | 5                | 25               |
| BOTANICAL GARDENS AND METEOROLOGICAL OFFICE | ... | ... | ... | Entebbe | 60               | 38               |

### EXPERIMENTAL PLANTATIONS :—

- |                        |                        |
|------------------------|------------------------|
| (1) Kampala.           | (4) Fort Portal, Toro. |
| (2) Kakumiro, Mubende. | (5) Kumi, Teso.        |
| (3) Simsa, Soroti.     | (6) Serere, Teso.      |
| (7) Bukalasa, Mengo.   |                        |

## ANNUAL REPORT, 1922.

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# STAFF LIST.

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|                                       |     |     |                                               |
|---------------------------------------|-----|-----|-----------------------------------------------|
| <i>Director of Agriculture</i>        | ... | ... | S. SIMPSON, B.SC. (EDIN.), M.R.A.S.E., N.D.A. |
| <i>Deputy Director of Agriculture</i> | ... | ... | L. HEWETT, M.R.A.C.                           |
| <i>Office Superintendent</i>          | ... | ... | A. S. WIDGERY.                                |
| <i>Clerk</i>                          | ... | ... | H. G. SMITH.                                  |

---

## GENERAL DIVISION.

### *Senior District Agricultural Officers :*

R. G. HARPER. A. R. MORGAN.

### *District Agricultural Officers :*

J. D. SNOWDEN R. T. WICKHAM. (VACANT).

### *Assistant District Agricultural Officers :*

C. HAZEL. P. CHANDLER. CAPT. HARMSWORTH, M.C.  
G. T. PHILPOTT. F. W. HALL. E. A. RUCK.

*Ploughing Instructor* ... A. FISHBURN.

---

## COTTON DIVISION.

|                                      |     |     |                                                      |
|--------------------------------------|-----|-----|------------------------------------------------------|
| <i>Ginning Inspector</i>             | ... | ... | O. E. LORD.                                          |
| <i>District Agricultural Officer</i> | ... | ..  | E. G. STAPLES, B.A., DIP. AGRIC. (CANTAB.), M.R.A.C. |
| <i>Engineer</i>                      | ... | ... | CAPT. F. G. R. LE PLA, M.C., A.M.I.MECH.E.           |
| <i>Ploughing Instructor</i>          | ..  | ... | E. M. BAIRD.                                         |

---

## BIOLOGICAL DIVISION.

|                     |     |     |     |                                         |
|---------------------|-----|-----|-----|-----------------------------------------|
| <i>Mycologist</i>   | ... | ... | ... | W. SMALL, M.B.E., M.A., B.SC., F.L.S.   |
| <i>Botanist</i>     | ..  | ... | ... | T. D. MAITLAND.                         |
| <i>Entomologist</i> | ... | ... | ... | H. HARGREAVES, A.B.C.S., D.I.C., F.E.S. |

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## BOTANICAL DIVISION.

|                                          |    |     |     |     |                 |
|------------------------------------------|----|-----|-----|-----|-----------------|
| <i>Curator, Botanic Gardens, Entebbe</i> | .. | ... | ... | ... | T. D. MAITLAND. |
|------------------------------------------|----|-----|-----|-----|-----------------|

---

## CLERICAL STAFF.

|                 |                 |
|-----------------|-----------------|
| W. NORONHA.     | J. C. DE SOUZA. |
| P. S. J. SILVA. | A. S. REMEDIOS. |

**ANNUAL REPORT**  
OF  
**THE DEPARTMENT OF AGRICULTURE,**  
**UGANDA PROTECTORATE,**  
**for the Year ended 31st December, 1922.**

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**Staff.**

Mr. S. Simpson, Director of Agriculture, went on leave on 24th April and returned on 21st November, and during his absence Mr. L. Hewett, Deputy Director, was in charge.

Mr. A. R. Morgan, Senior District Agricultural Officer, went on leave on 24th April and returned on 21st November.

Mr. J. D. Snowden, District Agricultural Officer, went on leave on 3rd July and was away at the end of the year.

Mr. R. T. Wickham, District Agricultural Officer, went on leave on 24th April and was away at the end of the year.

Mr. E. G. Staples, District Agricultural Officer, arrived on 21st November on first appointment.

Mr. C. Hazel, Assistant District Agricultural Officer, returned from leave on 19th February.

Mr. P. Chandler, Assistant District Agricultural Officer, returned from leave on 16th April.

Capt. J. S. Harmsworth, m.c., Assistant District Agricultural Officer, went on leave on 29th August and was away at the end of the year.

Mr. F. W. Hall, Assistant District Agricultural Officer, went on leave on 29th August and was away at the end of the year.

Mr. T. D. Maitland returned from leave, on transfer from Kenya Colony, on 31st May on appointment as Botanist.

Mr. H. Hargreaves, Entomologist, went on leave on 24th April and returned on 21st November.

The appointment of Capt. F. G. R. Le Pla, m.c., Engineer, was terminated on 31st March owing to the temporary closing down of the Siroko Valley development scheme.

Mr. A. Fishburn, Ploughing Instructor, went on leave on 28th February and returned on 28th September.

Mr. E. M. Baird, Ploughing Instructor, arrived on 28th September on first appointment.

Mr. H. G. Smith, Clerk, returned from leave on 16th April.

It will be noticed that during the greater part of the year the number of officers available for duty in the country was small. Some increase was made to the number of native Agricultural Instructors, although it was difficult to obtain very suitable candidates. Amongst the Baganda the better educated still prefer clerical work.



### General.

The effects of the 1921 trade depression were still felt throughout the greater part of the year, but towards the close signs were not wanting of a gradual return of more normal times. On the whole the climatic conditions were good, although late in the year the drought affected the yield of the cotton crop adversely in the Eastern Province.

### Exports.

The table below shews the details of exports—comparative tables for the last five years will be found in Appendix No. 8:—

|                       |     |       |         |     | £          | Per cent. |
|-----------------------|-----|-------|---------|-----|------------|-----------|
| Cotton                | ... | Cwts. | 172,464 | ... | 877,625    | 72.185    |
| Coffee                | ..  | "     | 51,262  | ... | 99,227     | 8.162     |
| Ivory                 | ... | lbs.  | 136,837 | ... | 68,419     | 5.627     |
| Chillies              | ... | Cwts. | 11,935  | ... | 52,768     | 4.340     |
| Sim-sim               | ... | "     | 55,927  | ... | 47,100     | 3.874     |
| Skins, Sheep and Goat | ... | "     | 2,832   | ... | 18,680     | 1.537     |
| Hides and Calf Skins  | ... | "     | 5,397   | ... | 11,197     | 0.921     |
| Cotton Seed           | ... | "     | 42,478  | ... | 9,532      | 0.784     |
| Ground Nuts           | ... | "     | 10,137  | ... | 9,236      | 0.759     |
| Ghee                  | ... | "     | 909     | ... | 4,329      | 0.356     |
| Jaggree               | ... | "     | 2,398   | ... | 3,742      | 0.308     |
| Rubber                | ... | lbs.  | 124,867 | ... | 3,741      | 0.308     |
| Cacao                 | ... | Cwts. | 565     | ... | 2,370      | 0.195     |
| Other Exports         | ... | ...   | ...     | ... | 7,827      | 0.644     |
|                       |     |       |         |     | £1,215,793 |           |

### Cotton.

Cotton is by far the most important crop grown in the country and a glance at the above table of exports shews that it represents over 72 per cent of the total value of produce exported. It is almost entirely grown by thousands of native peasants, throughout the country on their own plots and, as it is a crop that lends itself so admirably to this type of cultivation, its position has become well established in native agriculture and steady progress can be reported.

(a) *Acreage*.—The approximate acreage planted throughout the Protectorate in 1922 is shewn in the table below:—

| EASTERN PROVINCE:—  |     |     |     |     |     | <i>Acre.</i> |
|---------------------|-----|-----|-----|-----|-----|--------------|
| Teso District       | ... | ... | ... | ... | ... | 83,971       |
| Bukedi District     | ... | ... | ... | ... | ... | 72,148       |
| Busoga District     | ... | ... | ... | ... | ... | 59,492       |
| Lango District      | ... | ... | ... | ... | ... | 35,008       |
|                     |     |     |     |     |     | 250,619      |
| BUGANDA PROVINCE:—  |     |     |     |     |     | <i>Acre.</i> |
| Mengo District      | ... | ... | ... | ... | ... | 60,000       |
| Entebbe District    | ... | ... | ... | ... | ... | 10,000       |
| Masaka District     | ... | ... | ... | ... | ... | 10,000       |
| Mubende District    | ..  | ... | ... | ... | ... | 6,000        |
|                     |     |     |     |     |     | 86,000       |
| NORTHERN PROVINCE:— |     |     |     |     |     | <i>Acre.</i> |
| Gulu District       | ... | ... | ... | ... | ... | 4,000        |
| West Nile District  | ... | ... | ... | ... | ... | 2,000        |
| Chua District       | ... | ... | ... | ... | ... | 1,000        |
| Bunyoro District    | ... | ... | ... | ... | ... | 1,500        |
|                     |     |     |     |     |     | 8,500        |
| GRAND TOTAL         |     |     |     |     |     | 345,119      |

(b) *1921-22 Crop*.—The crop was a very poor one owing to very dry weather in December. Late plantings, which represented a large proportion of the acreage, gave very little yield and the season was a disappointing one.

(c) *Government Purchase of Cotton*.—The final figures of this transaction, alluded to in the report for 1921, shew a net profit of £31,022 on an expenditure of £45,805 and this sum was credited to Revenue.



(d) *Ginneries.*—The Ginning Inspector paid 118 visits involving 63 different ginneries and in connexion with the year's work he reports that the ginning of the 1921/22 crop in the Eastern Province was practically completed before the end of June. He notes considerable improvement in the handling of cotton at the majority of ginneries visited, particularly as to picking over the cotton before ginning. An improvement is recorded by the more general use of baskets in place of hessian and sacking for conveying seed cotton from the opener to the gins and the lint from the gins to the press, thereby reducing the risks of extraneous matter adhering to the cotton. More care, however, is needed at re-pressing stations to prevent the packing into a single bale of two hand-pressed bales of different quality or colour and to exclude the damaged cotton so often found just inside the wrapping of hand-pressed bales.

(e) *Cotton Seed Selection Stations.*—

SERERE, TESO DISTRICT.—The buildings were completed during the year. This plantation is under the charge of a Senior Agricultural Officer and is the main centre in the Eastern Province for cotton selection work and for the training of natives in cotton cultivation. The report for the year will be found on pages 18—26.

BUKALASA, MENGO DISTRICT.—This plantation has been started for work on similar lines to the one at Serere and to deal with Buganda Province cotton. The house, office and main store were completed during the year and some 50 acres of cotton and other crops are under cultivation.

### **Tractor Ploughing.**

The three Austin tractors and ploughing equipment presented by the Empire Cotton Growing Corporation were operated until the end of March when work was temporarily suspended.

The area chosen was the Siroko Valley in Bukedi District—a fertile but uninhabited part of the country. 336 acres were ploughed and harrowed and the land was speedily taken up by various of the neighbouring hill tribes, who planted wimbi and subsequently cotton. The area was divided into half-acre plots and the experiment gave such promise of success and development that it was soon evident that the scheme could be proceeded with safely the following season.

### **Coffee.**

*European Cultivation.*—Coffee is the main crop for European cultivation. As a result of the Coffee Expert's visit in 1921, more attention has been paid to the question of shade and new systems of training the trees are being tried. The exports for the year amounted to 51,262 cwt. valued at £99,227.

*Native Cultivation.*—More interest was shewn during the year by native growers and there were indications that coffee would be more extensively grown in future. Instruction was given and a small native staff for coffee work was trained on the Kampala Plantation. Beds of selected *coffea robusta* were also laid down for distribution in due course.

### **Bugishu Coffee Industry.**

Small *coffea arabica* plantations had been started some years ago amongst the Bagishu in the Elgon hills of Bukedi District, and during the year a small pulping station was opened at Bubulu where the coffee is properly handled under supervision. The native grower brings in his fresh cherry to the depôt where it is treated in bulk, and subsequent parchment, after careful drying, is sold on behalf of the producers.

Four tons were exported in December valued at £265. Towards the end of the year more nurseries were laid down in both Northern and Southern Bugishu and the trained native staff was augmented, with the object of teaching the Bagishu how to treat their coffee plots on better lines.

### **General Crops.**

*Rice.*—The chief rice growing area in the Protectorate is found in Bunyuli in Bukedi District where the number of plots planted amounts to several thousands. Arrangements were made to open a power hulling plant for dealing with the rice, which it is hoped to have in working order in 1923. The crop is also grown in other parts of the country, *viz.*, Toro, Sese, and to some extent in the neighbourhood of Kampala. Several varieties are under cultivation and of them "Bungara" is perhaps the most popular.



*Chillies.*—The cultivation of this crop was extended during the year and prices were good up to June. Exports amounted to 11,935 cwts. valued at £52,768.

*Sim-sim.*—An increased export of this crop is also recorded amounting to 55,927 cwts. compared with 20,060 cwts. the preceding year.

*Rubber.*—The price of rubber remained very low until towards the close of the year, when a sharp rise to 1/- a lb. took place on the home markets. Exports from Uganda re-commenced as a result of the improved situation and tapping was resumed on several of the established estates. Exports for the year amounted to 124,867 lbs. valued at £3,741, but with the improved outlook, there is every likelihood that rubber will take a more important place in the near future.

*Ground Nuts.*—Prices moved upwards at the end of the year and shipments took place on a fair scale. Exports amounted to 10,137 cwts. valued at £9,236.

*Cacao.*—The crop has not received much attention and exports only amounted to 565 cwts. valued at £2,370.

### Ploughing.

Some progress was made in ploughing extension in the late months of the year, following a period of stagnation arising from the scarcity of money in the natives' hands. The Ploughing Instructor was on leave during the year, returning in October, when a second Instructor also arrived, and by December, and the opening of the cotton buying season, a demand for ploughs arose and general activity was resumed in the Eastern Province. 83 ploughs were bought by natives in Kumi and Bukedi Counties of Teso District.

### Other Crops.

*Sugar.*—This crop began to assume a more important place in the local agricultural system and large areas were put under cultivation in Kyagwe County in Buganda, where a factory for manufacturing white sugar was under construction during the year. The acreage under sugar is probably not more than 4,000 but statistics are not available. Jaggree has been turned out in fair quantities and there are several small plants for dealing with cane on these lines and exports to the extent of 2,398 cwts. is recorded. The stocks of cane on the Government Plantations were extended and several varieties have been undergoing trial for some years.

*Tea.*—This is a crop that has considerable possibilities in Uganda for the local market. It is grown on several of the Government Plantations and seed is always available for distribution. The tea which is prepared by only the simplest methods finds a ready market amongst natives and many of them have recently inquired for seed for their own gardens. It is grown and prepared on more advanced lines by one planter and the product meets a demand for European consumption in Uganda and Kenya.

*Tobacco.*—Trials were continued during the year in Teso with seed from Nyasaland. A successful crop was raised, but without adequate means for thorough treatment, little can be done.

*Wheat.*—Experiments with Kenya varieties were continued at the Butorogo station in Mubende and some increase in acreage in both Toro and Mubende Districts was made in native cultivation.

### Government Plantations.

*The Botanic Gardens, Entebbe.*—In referring to the distribution of plants and seeds the Manager writes:—

“The period under review shows the highest recorded distribution of economic and decorative plants from the Gardens. The number of applicants for fruit trees and seeds during the free distribution in April was 47, and 4,580 plants and 59 packets of seeds were distributed. The following is the total list of plants and seeds sent out during the year:—

| PLANTS.   |             | SEEDS.                                  |                                         |
|-----------|-------------|-----------------------------------------|-----------------------------------------|
| Economic. | Decorative. | Economic.                               | Decorative.                             |
| 6,394     | 6,383       | Packets ... 178<br>Single Seeds ... 930 | Packets ... 277<br>Single Seeds ... 406 |



"A considerable number of new plants has been added to the collection in the Gardens, from seeds which have been received from various sources, including the Royal Botanic Gardens, Edinburgh; the Royal Botanic Gardens, Kew; and La Mortola, Ventimiglia, Italy."

The cacao records are of special interest as they are obtained from some of the oldest trees in the country and of this crop the Manager writes:—"The number of pods collected from the Forastero variety in both plots shews an increase on the records of last year, whereas the Calabacillo variety shows a decrease. There is no apparent reason for the above as the varieties are mixed together on each plot and are not in any way treated differently from each other. The scale insect *Stictococcus diversiseta*, Silv., has been a troublesome pest throughout the year, and has undoubtedly been the cause of destroying a large number of the young pods. An experiment which was carried out with whale oil soap at a strength of 1 lb. to 4 gallons of water, to note its effectiveness in combating this pest, was commenced on the 7th October on 32 trees most badly infested and discontinued on the 24th November. The trees were sprayed 14 times at various intervals, and at the time the spraying was discontinued there was no apparent sign of scale. From the observations which were made it was found that whale oil soap mixture to be effective in controlling this insect should be sprayed every eight or nine days."

*The Kampala Plantation.*—The Botanist's report on this is enclosed.

*The Kakumiro Plantation, Mubende.*—In connexion with shade trees in coffee the Manager writes as follows:—

"*Erythrina velutina* is the best of the shade trees tried here up to the present. Some of these trees planted in 1914 are now giving a spread of 30 feet and they are worthy of trial in other districts. *Erythrina velutina* is a flat topped, leguminous tree branching at about nine feet from the ground. It sheds a good mulch of leaves, but is difficult to establish owing to the attacks of a stem boring caterpillar. *Leucaena glauca* is a slow grower and has made little headway during the past twelve months. *Albizia Lebbeck* planted in April has made very poor growth."

### Expenditure.

Under the ordinary estimates and loan the expenditure on the Agricultural Department vote was as under for 1921 and 1922:—

|                          |     |     |         |     |      |
|--------------------------|-----|-----|---------|-----|------|
| Under Ordinary Estimates | ... | ... | £19,691 | ... | 1921 |
| " " "                    | ... | ... | £19,855 | ... | 1922 |
| Under Loan               | ... | ... | £ 4,377 | ... | 1921 |
| " " "                    | ... | ... | £ 4,622 | ... | 1922 |

During the same periods and under the same headings the figures of the Protectorate *Total* expenditure was:—

|                          |     |     |          |     |      |
|--------------------------|-----|-----|----------|-----|------|
| Under Ordinary Estimates | ... | ... | £786,166 | ... | 1921 |
| " " "                    | ... | ... | £920,228 | ... | 1922 |
| Under Loan               | ... | ... | £175,122 | ... | 1921 |
| " " "                    | ... | ... | £138,375 | ... | 1922 |

It will be seen from the foregoing that of the total expenditure under both headings, the proportion charged to agriculture was very small.

### Agricultural Education.

There is as yet little to report in this connexion. The new Technical College at Makerere started taking in students, but agricultural classes had not begun.

### Agricultural Statistics and Meteorological Returns.

All details available will be found in the appendices to the report.

### Mycological.

The report of the Mycologist is enclosed.

### Entomological.

The Entomologist's report is enclosed.

S. SIMPSON,  
Director of Agriculture.

ANNUAL REPORT

ON THE

GOVERNMENT PLANTATION, KAMPALA.

Labour.

The labour supply has been good throughout the year and we have had from time to time to turn men away who have come seeking work as we had sufficient for our needs. The average wage for labourers was Shs. 12 per month.

Meteorological.

The weather conditions were on the whole favourable for the plantation crops. The total rainfall was 49·23 inches. That is a higher figure than for the two previous years, but is still below the average. The months of January and December were as usual hot and trying. During August, a violent storm occurred, causing considerable damage to the crops. The damage was soon repaired, however, owing to the subsequent favourable conditions. Comparative rainfall figures for the last six years are given together with the average monthly Shade and Dry and Wet Bulb temperatures :—

RAINFALL : COMPARATIVE RECORDS FOR SIX YEARS.

| MONTHS.       | 1917         |         | 1918         |         | 1919         |         | 1920         |         | 1921         |         | 1922         |         |
|---------------|--------------|---------|--------------|---------|--------------|---------|--------------|---------|--------------|---------|--------------|---------|
|               | No. of days. | Inches. | No. of days. | Inches. | No. of days. | Inches. | No. of days. | Inches. | No. of days. | Inches. | No. of days. | Inches. |
| January ...   | 13           | 3·54    | 8            | 1·37    | 2            | 0·05    | 6            | 3·88    | 9            | 2·19    | 9            | 2·89    |
| February ...  | 17           | 6·14    | 4            | 0·56    | 12           | 8·97    | 6            | 0·65    | 14           | 1·68    | 17           | 3·05    |
| March ...     | 7            | 4·18    | 11           | 1·97    | 12           | 8·18    | 15           | 4·38    | 14           | 2·09    | 18           | 4·06    |
| April ...     | 19           | 8·63    | 19           | 5·41    | 20           | 5·16    | 17           | 4·74    | 18           | 5·63    | 18           | 4·16    |
| May ...       | 18           | 8·10    | 13           | 4·93    | 14           | 3·29    | 21           | 5·48    | 24           | 2·97    | 20           | 7·83    |
| June ...      | 12           | 4·46    | 11           | 3·29    | 6            | 1·79    | 14           | 3·24    | 13           | 2·57    | 16           | 3·01    |
| July ...      | 3            | 0·23    | 4            | 0·89    | 10           | 1·36    | 15           | 4·69    | 15           | 4·05    | 10           | 2·94    |
| August ...    | 14           | 4·29    | 12           | 4·55    | 11           | 3·54    | 10           | 2·92    | 21           | 2·30    | 19           | 5·02    |
| September ... | 16           | 8·58    | 10           | 3·47    | 15           | 6·64    | 11           | 4·45    | 15           | 1·74    | 16           | 2·68    |
| October ...   | 12           | 5·33    | 14           | 2·64    | 15           | 3·45    | 18           | 3·50    | 17           | 7·25    | 25           | 7·45    |
| November ...  | 4            | 1·60    | 12           | 1·50    | 16           | 5·04    | 20           | 5·58    | 17           | 8·00    | 13           | 2·67    |
| December ...  | 6            | 0·52    | 7            | 1·79    | 13           | 2·76    | 15           | 3·39    | 9            | 2·26    | 12           | 3·47    |
|               | 141          | 55·60   | 125          | 32·37   | 146          | 50·23   | 168          | 46·35   | 186          | 43·63   | 193          | 49·23   |

MONTHLY AVERAGE SHADE TEMPERATURES, 1922.

| MONTHS.       | 7 A.M.    |           | 2 P.M.    |           | Maximum Temperature. | Minimum Temperature. | Highest Maximum Temperature. | Lowest Minimum Temperature. |
|---------------|-----------|-----------|-----------|-----------|----------------------|----------------------|------------------------------|-----------------------------|
|               | Dry Bulb. | Wet Bulb. | Dry Bulb. | Wet Bulb. |                      |                      |                              |                             |
| January ...   | 66·5      | 64·7      | 85·0      | 72·3      | 81·6                 | 63·8                 | 96·0                         | 61·0                        |
| February ...  | 66·4      | 64·8      | 84·8      | 73·0      | 87·2                 | 64·0                 | 92·0                         | 62·0                        |
| March ...     | 66·1      | 64·5      | 78·8      | 71·4      | 82·6                 | 63·8                 | 87·0                         | 62·0                        |
| April ...     | 66·2      | 65·2      | 80·6      | 71·3      | 82·2                 | 63·9                 | 86·0                         | 61·0                        |
| May ...       | 66·3      | 64·7      | 75·9      | 70·8      | 77·6                 | 63·5                 | 84·0                         | 61·0                        |
| June ...      | 65·4      | 63·7      | 75·6      | 70·6      | 77·1                 | 63·6                 | 81·0                         | 61·0                        |
| July ...      | 64·4      | 62·3      | 72·6      | 69·2      | 77·1                 | 63·4                 | 82·0                         | 60·0                        |
| August ...    | 64·0      | 62·7      | 75·4      | 72·4      | 77·5                 | 62·4                 | 85·0                         | 60·0                        |
| September ... | 64·8      | 63·2      | 77·8      | 74·4      | 81·3                 | 63·6                 | 88·0                         | 61·0                        |
| October ...   | 65·4      | 64·1      | 78·5      | 74·2      | 83·2                 | 64·4                 | 90·0                         | 63·0                        |
| November ...  | 66·6      | 65·3      | 82·4      | 78·1      | 86·3                 | 64·2                 | 93·0                         | 62·0                        |
| December ...  | 66·1      | 64·8      | 83·9      | 79·8      | 86·8                 | 63·9                 | 93·0                         | 62·0                        |



### Distribution of Plants and Seeds.

The following table gives in detail the distribution of plants and seeds for the year. There is a considerable increase shewn in the number of economic plants distributed, owing largely to the free issues during the planting months of April and May:—

| PLANTS.     |           | SEEDS (Packets). |           | SEEDS (Weight). |           | Tea seeds. | Rice. | Maize. | Beans. | Coffea robusta (selected). |
|-------------|-----------|------------------|-----------|-----------------|-----------|------------|-------|--------|--------|----------------------------|
| Decorative. | Economic. | Decorative.      | Economic. | Decorative.     | Economic. |            |       |        |        |                            |
| 618         | 8,261     | 18               | 30        | ozs. 28         | lbs. 234  | 5,436      | 1,514 | 552    | —      | lbs. 73½                   |

### Coffeas.

Neither the “Coffee Bug” (*Antestia lineaticolis*) nor the “Leaf Disease” (*Hemileia vastatrix*) was much in evidence during the year. The latter began to make its appearance, however, during December on the young flush of leaves produced by the growing period of October and November.

*Arabica*.—The yields from the arabica plots for the year are very disappointing indeed. A large number of the trees were again stumped and the low yields were largely due to this—the trees have also been over-pruned. Hitherto the blocks of coffee were divided up into sections or plots numbering in all 13. These sections have had various individual treatment from time to time, details of which are given in previous reports. These sections were grouped during the year under review. Sections 1—7 forming group A., 8, 9 and 10 group B., 11, 12 and 13 group C. From these three groups the yield was only 173 lbs. of parchment and although the stumped trees have responded well the prospects for next year are not too bright.

*Robusta*.—The yields of the robusta plots are lower than those of last year, indeed the yields from all the principal coffeas which we have under test are less and it is probable, as a review of the previous years’ yields indicates, that low yields will alternate with heavy. The prospects for next year are certainly good as there have been two recent heavy flowerings.

The following table gives the comparative yields of the Toro and Bwamba plots for the last seven years. There is added also for the first time the yields of Toro No. 9. This yield is of course not comparable with the others as it is from much younger trees:—

### COFFEA ROBUSTA.

| Number of Plot. | Origin.              | Number of Trees. | Area in Acres. | Date planted. | Distance apart. | Average Yield of Parchment Coffee. |          |          |           |           |           |           |                            |          |            |          |          |          |          |          |                            |
|-----------------|----------------------|------------------|----------------|---------------|-----------------|------------------------------------|----------|----------|-----------|-----------|-----------|-----------|----------------------------|----------|------------|----------|----------|----------|----------|----------|----------------------------|
|                 |                      |                  |                |               |                 | Per Tree.                          |          |          |           |           |           |           | Per Acre.                  |          |            |          |          |          |          |          |                            |
|                 |                      |                  |                |               |                 | 1916-17                            | 1917-18  | 1918-19  | 1919-20   | 1920      | 1921      | 1922      | Yearly Average for Period. | 1916-17  | 1917-18    | 1918-19  | 1919-20  | 1920     | 1921     | 1922     | Yearly Average for Period. |
| 1               | Toro or Congo        | 190*             | ·62            | March, 1914   | Feet 12×12      | lbs. 2·00                          | lbs. 4·5 | lbs. 4·5 | lbs. 1·10 | lbs. 1·65 | lbs. 1·24 | lbs. 1·32 | lbs. 1·81                  | lbs. 604 | lbs. 1,369 | lbs. 258 | lbs. 333 | lbs. 505 | lbs. 581 | lbs. 227 | lbs. 552                   |
| 2               | Bwamba ...           | 160              | ·50            | May, 1915     | 12×12           | ...                                | 192      | 31       | 2·5       | 1·19      | 2·42      | ·96       | 1·55                       | ...      | 614        | 102      | 81       | 332      | 775      | 306      | 376½                       |
| 9               | Coffea Robusta No. 9 | 253              | ·50            | March, 1918   | 12×12           | ...                                | ...      | ...      | ...       | ...       | ·22       | 1·14      | ·68                        | ...      | ...        | ...      | ...      | ...      | 112½     | 576      | 344½                       |

\* 172 trees from August, 1921.

These are undoubtedly poor yields for robusta, and apart from the incidence of low yields following heavy. They are too poor to be accounted for by that alone. The fault lies, it would appear, in applying the system of pruning *Coffea arabica* to these trees. They will not accommodate themselves to it and from the experience we have so far gained we should say that the robusta type should be allowed to grow *ad lib*, or at least abandon to a very large extent the drastic prunings practised on these trees hitherto.

The following table gives the yield from a native tree grown under native conditions, *i.e.*, allowed a free and natural development from the start. The tree is

roughly 12 feet high and 12 feet broad. Most of the high branches were bent down by means of a hooked stick and picking the cherry presented no unsurmountable difficulties.

YIELDS OF NATIVE ROBUSTA TREE GROWN UNDER NATIVE CONDITIONS, 1922.

| Date of Picking.    |    |    |    |    | Weight<br>of Cherry. | Weight<br>of Parchment. | Per cent of Parch-<br>ment to Cherry. |
|---------------------|----|----|----|----|----------------------|-------------------------|---------------------------------------|
|                     |    |    |    |    | lbs.                 | lbs.                    | %                                     |
| 1st :—30th October  | .. | .. | .. | .. | 17                   | 4½                      | 25                                    |
| 2nd :—13th November | .. | .. | .. | .. | 15                   | 3                       | 25                                    |
| 3rd :—22nd December | .. | .. | .. | .. | 24                   | 5                       | 25                                    |
| Total ..            |    |    |    |    | 56                   | 12½                     | —                                     |

It will be observed that this is only part of this year's crop—the autumn picking. The tree, however, will be kept under observation next year in order to obtain some definite idea as to what a normal tree under these conditions is capable of yielding.

It would be quite impossible for our *robusta* trees to approach any way near that yield if we persist in our pruning methods for they would simply not have the wood on which to bear it.

*Coffea Selection.*—We have made considerable progress in the selection of good *robusta* types and our No. 9 represents a fine bold bean. The cherry almost approaches in size the Arabian cherry and this feature in itself is good as it facilitates pulping. The bean is of good appearance and was favourably reported on by the home market as far back as 1918. The one great fault in the *Coffea robusta* planted throughout Uganda is the irregularity in the size of the cherry and bean. In No. 9 these bad features have been eliminated. Plot No. 9 is the progeny of tree No. 9—a tree which presented rather bold features. In plot No. 9 a further lot of trees shewing bold features, in all 16, have been numbered, and from these seed is being sown and distributed. Owing to the comparatively high prices for, and the ready sale of, *Coffea robusta* on the home market in recent years considerable demands have been made for seed, and numerous inquiries have been received with respect to the suitability of this type as a plantation crop. Seed to the extent of 73½ lbs. of our best types was disposed of and it would have been a simple matter disposing of a much larger quantity had seed been available. This is an indication of how far *Coffea robusta* is in favour here as a plantation crop. We have impressed on our inquirers, however, that to obtain a steady and profitable market for *Robusta* it is imperative to have the best seed available and a bean approaching, in appearance, and liquoring qualities, the Arabian type.

It will be appropriate to quote here from the reports of the Imperial Institute on our samples of *Robusta*.

The following refers to samples from individual trees possessing desirable features :—

“Samples 2 and 3 represent good types of *Robusta* coffee of first class quality from this variety and consisting of well made beans.”—*January, 1918.*

“The brokers stated that the samples were too small for roasting and liquoring trials, so that the above report is based solely on the appearance of the raw coffee. They also expressed the opinion that when these coffees are husked in bulk by modern machinery the results will be more satisfactory. With the exception of No. 1 Plot 3 and No. 6 Plot 3 respectively. (Bwamba wild coffees) these samples are of satisfactory character and would be suitable for the United Kingdom market.”—*June, 1918.*

“The report of the brokers on these samples confirms the result of the examination of the previous samples forwarded in May, 1917, and indicates that *Robusta* coffee grown at Kampala is of a very promising quality.”—*April, 1918.* The following refers to a mixed sample, but made up mostly of No. 9 :—

“The sample was submitted for roasting trials to experts who reported that it consisted of well-grown, heavy beans, rather small but very even in size; only a few imperfect beans were present.

“The characters of the roasted coffee were pronounced to be particularly good, especially in the evenness of colour and the close, hard texture of the beans.



whilst the liquor was remarkably free from any undesirable taint. The firm regarded the sample as of excellent quality and stated that it could be used freely for blending purposes.

The following refers to ordinary mixed samples:—

“A demand might perhaps be found at a low price either in the United Kingdom or on the Continent for the Robusta coffees represented by Nos. 9 and 13.”—*31st July, 1920.*

“Nos. 5 and 10. These samples of Robusta coffee are regarded as of inferior character and as worth Shs. 45 to Shs. 50 per cwt. in London at the present time. The sample differs widely in quality from the Robusta coffee dealt with in Imperial Institute report, dated November, 1918, which was an exceptionally good sample. It is not considered in the trade that the production of Robusta coffee representing the present should be encouraged,” and further “The samples of Robusta coffee are of poor quality and unless there is a prospect of producing this variety in commercial quantities equal to the sample dealt with in Imperial Institute report of November, 1918, it is doubtful if a remunerative market will be found for the product.”—*March, 1922.*

These reports are very illuminating and make the position with regard to *Coffea robusta* quite clear. It is obvious that amongst our Robusta there are types of very inferior quality which detract, when in the bulk, from those of higher quality, and that before a reliable product can be established these inferior types must be eliminated.

As regards selection we have made, as already stated, considerable progress since 1916, and the seed of *Coffea robusta* now being distributed is the third generation of variety No. 9 so favourably reported on by the Imperial Institute. At present there are 16 trees of bold character in the plot and we are endeavouring to confine distribution of seed to these.

*Excelsa and Liberian.*—These two types of coffee come practically within the same category both botanically and commercially. *Excelsa* is the more robust grower here and also more prolific in yields. From the table below it will be observed, however, that they are much lower than they were last year. Quoting again from the reports of the Imperial Institute on samples of both these types, we have the following:—

“The *Excelsa* coffee represented by these samples was considered unattractive and undesirable for the London market. *Liberian* coffee is not saleable in London for the United Kingdom but is occasionally in demand for export to foreign countries.”

On comparing these two reports we find that there is not the same promise in the latter group. This is of course obvious in making a comparison of the beans in the field. In the parchment they are decidedly less attractive. In liquoring qualities they are harsher and approach in a much less degree the desirable qualities of *Coffea arabica* than do the *Coffea robusta*. There is nevertheless considerable variation among the *Excelsa* trees, especially so in “Culture” Plot No. 1 and 2, and this fact is not being overlooked.

#### COFFEA EXCELSA.

| Number of Plot. | Variety.           | Number of Trees. | Area.—Acres. | Date planted. | Distance apart. | Average Yield of Parchment Coffee. |             |                  |              |                    |                                  |            |            |                  |                |                    |                                  |
|-----------------|--------------------|------------------|--------------|---------------|-----------------|------------------------------------|-------------|------------------|--------------|--------------------|----------------------------------|------------|------------|------------------|----------------|--------------------|----------------------------------|
|                 |                    |                  |              |               |                 | Per Tree.                          |             |                  |              |                    |                                  | Per Acre.  |            |                  |                |                    |                                  |
|                 |                    |                  |              |               |                 | 1918-19                            | 1919-20     | 1920<br>9 months | 1921         | Present<br>Record. | Yearly<br>average<br>for period. | 1918-19    | 1919-20    | 1920<br>9 months | 1921           | Present<br>record. | Yearly<br>average<br>for period. |
|                 |                    |                  |              |               |                 |                                    |             |                  |              |                    |                                  |            |            |                  |                |                    |                                  |
| 1               | Culture No. 2 ...  | 195              | 1*           | Sept.<br>1915 | Feet.<br>15×15  | lbs.<br>'46                        | lbs.<br>'11 | lbs.<br>'34      | lbs.<br>6'81 | lbs.<br>2'34       | lbs.<br>2'01                     | lbs.<br>90 | lbs.<br>22 | lbs.<br>68       | lbs.<br>1,326½ | lbs.<br>422        | lbs.<br>372                      |
| 2               | Plyendel No. 1 ... | 120              | '62          | do            | 15×15           | '21                                | '22         | '78              | 1'77         | '68                | '73                              | 42         | 44         | 152              | 342            | 132                | 142                              |
| 3               | Plyendel No. 2 ... | 65               | '33          | do            | 15×15           | '06                                | '35         | '50              | 2'09         | '87                | '77                              | 12         | 70         | 98               | 412            | 171                | 153                              |

\* 180 trees from August, 1921.

## Sugar Cane.

The sugar cane work has been carried on throughout the year and the sugar men are now well up in the process of producing Muscovado sugar. There have been few demands for cane for planting purposes for the simple reason that most plantations have now their own stock. We have, however, supplied quantities of juice to local firms for tests in the production of white sugar locally.

A large amount of cane has been sold to natives for consumption, and the quantity disposed of in this manner realized Shs. 776/52 cts.

The following table shows the yields from the  $\frac{1}{8}$ -acre plots laid down during January, 1921. The plots are arranged side by side and on a soil of even texture throughout. For that reason alone these tests provide fairly reliable records of the yielding qualities of our several types. Two plots, Native and Ceylon var. No. 2 respectively, were ruled out of the list as they were unfortunately badly attacked by "red rot" disease and had to be dug up and burned.

Referring to the table it will be observed that Var. 1528 gave the highest percentage of sugar to cane, *viz.*, 10.19. Our previous record bears out this high yielding tendency compared with others, *vide* Agricultural Report, 1921, pp. 18—21. "Striped Ribbon" again stands high, but probably over a larger area and with soil conditions similar to those of these plots there would not be a very wide choice with respect to the yielding properties of these several types.

The total sugar manufactured from all our plots during the year was 6,830 lbs., and the quantity sold realized Shs. 1,685. The price of first quality, Muscovado dropped from 40 to 30 cts. per lb. but there has been on the whole a ready sale for it. There was difficulty, however, in disposing of our 2nd quality, which is sold at 20 cts. per lb.

MUSCOVADO SUGAR YIELDS.

| Variety.       | Date planted. | Where grown.   | No. of canes. | Weight of canes. | Juice extracted.    |                             | Muscovado Sugar.  |                             |                    |       |                    |       |                   |       |
|----------------|---------------|----------------|---------------|------------------|---------------------|-----------------------------|-------------------|-----------------------------|--------------------|-------|--------------------|-------|-------------------|-------|
|                |               |                |               |                  | Amount.             | Per cent to weight of cane. | Total.            | Per cent to weight of cane. | 1st Quality.       |       | 2nd Quality.       |       | 3rd Quality.      |       |
|                |               |                |               |                  |                     |                             |                   |                             |                    | %     |                    | %     |                   | %     |
| D. 131         | ..            | January, 1921. | 739           | 3,000            | 1,777               | 59.23                       | 303               | 10.10                       | 47                 | 15.51 | 158 $\frac{7}{8}$  | 52.48 | 118 $\frac{1}{8}$ | 37.27 |
| D. 74          | ...           |                | 999           | 3,600            | 2,135               | 59.31                       | 360               | 10.00                       | 92                 | 25.55 | 267 $\frac{1}{8}$  | 74.44 | nil               | —     |
| 1,528          | ...           |                | 1,171         | 3,600            | 2,144               | 59.56                       | 366 $\frac{1}{2}$ | 10.19                       | 131 $\frac{5}{16}$ | 35.97 | 214 $\frac{3}{16}$ | 58.58 | 30                | 8.34  |
| Striped Ribbon | ...           |                | 562           | 2,400            | 1,423               | 59.71                       | 240 $\frac{3}{4}$ | 10.04                       | 100 $\frac{1}{2}$  | 41.91 | 140 $\frac{1}{4}$  | 58.09 | nil               | —     |
| White Tanna    | ...           |                | 1,085         | 4,800            | 2,845               | 59.27                       | 482               | 10.04                       | 112 $\frac{3}{16}$ | 23.24 | 369 $\frac{5}{16}$ | 76.56 | nil               | —     |
| L. Red Ceylon  | ...           |                | 1,424         | 6,000            | 3,551               | 59.18                       | 603 $\frac{1}{2}$ | 10.07                       | 88 $\frac{9}{16}$  | 14.74 | 420 $\frac{7}{16}$ | 69.70 | 93                | 15.40 |
| Java Cane      | ...           | Upland.        | 2,107         | 8,400            | 4,980 $\frac{1}{2}$ | 59.30                       | 841 $\frac{1}{4}$ | 10.02                       | 261 $\frac{5}{16}$ | 31.00 | 577 $\frac{7}{16}$ | 68.65 | nil               | —     |
| Black Tanna    | ...           |                | 1,266         | 5,700            | 3,376               | 59.23                       | 572               | 10.03                       | 182                | 31.82 | 386 $\frac{1}{2}$  | 67.66 | nil               | —     |

## Para Rubber.

Tapping has been carried on throughout the year on two groups of series. The yields from the old group were pooled so that they possess little or no interest.

The new group was set up during July, 1921, with the object in view of ascertaining or demonstrating the causes which lead up to "Brown Bast." This disease is generally attributed to excessive tapping or is accelerated by it. The systems of tapping adopted in this experiment range therefore from those of an excessive, *i.e.*, daily tapping, to those of an extremely conservative nature, *i.e.*, with four months rest period.

So far "Brown Bast" has not made its appearance; there have been, however, cases of "Bark rot" of the tapped surface, but they have not been confined to the excessively tapped series although the trouble has been more severe here.

The range in the methods of tapping in this group will no doubt provide some useful information as tapping proceeds; it is sufficiently wide to make the degrees of physiological disturbance in the trees readily perceptible and to demonstrate the happy medium in tapping method.



### Cacao.

The original table, *i.e.*, giving the yields of the numbered trees is not included here this year. The table gives the history of a number of trees over a period of nine years and is of considerable interest. The average yields shew on the whole a gradual decrease, they have been at no time at a high level.

These trees were numbered as they came into bearing so that the record covers their whole yielding period to date. They can be taken as fairly typical of the cacao trees in the country. During their young stages of growth and yielding periods they were healthy, vigorous and full of promise and it is safe to say that the climatic conditions are not the cause of the practical failure of cacao as a plantation crop in these parts, unless it is argued that the climatic conditions favour the insects and fungoid pests which have devastated the plantations so much.

The major pests have been the "Mosquito Blight" *Helopeltis bergrothii*, which in addition to sucking and thereby damaging the young twigs and branches has been responsible for a lot if not the bulk of useless pods, and the "canker" of the trunk of the trees which finally, if slowly, kills them out.

The proof of the contention that the climatic conditions are not at fault, and it may be added the soil conditions, is that these "cankered" trees very often send up remarkably strong suckers from below the "cankered" area and by which it is often possible to re-establish the tree; these suckers are liable of course to infection and very often do become "cankered" from the parent stem.

Deaths from this infection of "die back"? *Botryodiplodia theobromæ*, Pat., have been frequent, and some of our best trees, *i.e.*, the Nicaraguan and Forastero types have succumbed to it; its effects are both rapid and complete.

This appears to sum up briefly the position as regards cacao here and points to the cause of this crop having gone out of favour.

The areas on the plantations are gradually being reduced; the object is to reserve a few trees for Mycological and Entomological work and to confine experiments in the way of manurial treatment, the keeping of yield records, etc., to the two plots at Entebbe, which have been all along in better condition than those in the Plantation.

### Native Food Crops.

*Musa spp.*—In connection with our work on native food crops, a plot was set out during 1919 with all the available native types of bananas or "matoke." In all 37 varieties were collected, six suckers of each being obtained and labelled with the native varietal name. Interpretations of these native names were obtained as far as possible and some very interesting and valuable information regarding the varieties has been thereby obtained. The native aptitude in applying appropriate and indicative names to objects, etc., is well exemplified in these interpretations.

The majority of these types belong, as has been stated, to the "matoke" or cooking class of *Musa*, or are treated as belonging to that group by the native. They do not therefore include our well known table varieties. There is a probability, however, that some of these may be admirable table bananas and it has been arranged to allow all the varieties to ripen their fruits in store in order to ascertain if such be the case. We are aware so far that one at least is a useful table banana, *viz.*, "Mbide," the variety from which the native beer is made.

The table along with the interpretations of the names gives the yield of bunches and their weights for the year 1922. The yields are not very encouraging; that is accounted for to some extent at least by the fact that the position of the plot is not very favourable; it suffers during the dry weather and the soil too, lacks body. Furthermore a number of suckers have been attacked by the "Stool borer" *Cosmopolites Sordidus*, Germar., which has to some extent affected their productivity. In any case it would be premature to say anything with regard to the respective yielding qualities of the varieties as the records of yields have not been observed over a very long period.

Flour has so far been prepared from 25 varieties and sent to the Imperial Institute for report and analysis. We hope thereby to arrive at the nutrient value of each; and possessing this information combined with a knowledge of the prolificacy, vigour of growth, and other desirable and non-desirable qualities which it is hoped these tests will show, we shall know which variety or varieties will be the most economical for planting as sources of food.





### Native Agriculture.

Some useful work has been accomplished in recent years in connection with native agriculture. The year under review has been no exception. Our native agricultural instructors have been touring their respective districts, *viz.*, Kyagwe, Busiro, Kyadondo, Bulemezi, Mawokota, Busuju, and Singo. Their task has been principally an endeavour to interest native chiefs and other land-holders in agriculture, apart from their usual food plantations. They have been instructed during these tours to take counts of *Coffea arabica*, *Coffea robusta*, *Cacao* and *Para Rubber* as distributed amongst the natives. These figures are of sufficient interest to be included here and they are given in the table below. As a result of these tours, we have had numerous enquiries from chiefs and other natives about suitable crops for planting, and also about the disposal of their cocoa, rubber, coffee and other crops. There is no doubt about the keen interest the native has in agriculture and especially in exportable commodities from which he can make money.

The figures in the table, as far as cocoa and para rubber are concerned, are rather less than the totals arrived at in past years. That is because the native has lost interest in these crops and for the reason that he cannot dispose of small parcels in the local market. Consequently a number of para trees have been cut out, and in one case at least, they were known to be some of the oldest trees in the country. As a rule the produce from any of the crops which the native may be induced to plant, will come forward in small or comparatively small parcels, and in view of that fact and from the enquiries we have received from native farmers it is imperative for them to have traders with whom they can deal on these lines. The position as regards coffee is perhaps an exception to some extent, as the native can dispose of part of it in the native markets, but the native markets do not by any means absorb all that is produced. There are one or two Europeans in Kampala and several Indian traders who are dealing in small parcels of coffee and bulking it for export. The prospects are therefore good for this crop. At present, however, it is doubtful if it is generally known that such a market exists, and as the coffee is widely distributed, these markets would require to be extended.

The counts of *Coffea robusta* or "Uganda Coffee" have revealed a surprisingly large number and although generally the native possesses a few trees only, there are others who appear to be coffee planters.

With a view to extending *Coffea robusta* cultivation amongst the natives and especially on the Sese Islands, large numbers of plants of our bold types are being raised for distribution.

#### ENUMERATION TO DATE OF NATIVE-OWNED PARA, COCOA, COFFEA ARABICA AND C. ROBUSTA IN BUGANDA PROVINCE.

| SAZA.       | PARA.  |           | COCOA. | COFFEA ARABICA. |          |          |          |               | TOTAL   | COFFEA ROBUSTA. |          |          |          |               | TOTAL  |
|-------------|--------|-----------|--------|-----------------|----------|----------|----------|---------------|---------|-----------------|----------|----------|----------|---------------|--------|
|             | Tapped | Untapped. |        | 1 Year          | 2 Years. | 3 Years. | 4 Years. | Over 4 Years. |         | 1 Year.         | 2 Years. | 3 Years. | 4 Years. | Over 4 Years. |        |
| Kyadondo    | 2,367  | 13,167    | 644    | ...             | 340      | 3,897    | 5,152    | 74,928        | 84,317  | ...             | 81       | 307      | 117      | 2,368         | 2,873  |
| Busiro      | 3,064  | 7,667     | 8      | 24              | ...      | 1,097    | 552      | 13,424        | 15,097  | 65              | 58       | ...      | 47       | 9,925         | 10,095 |
| Kyagwe      | 1,247  | 7,064     | 3,360  | 1,720           | 1,414    | 2,153    | 5,005    | 85,542        | 95,839  | 70              | 420      | 25       | 13       | 2,318         | 2,846  |
| Bulemezi    | ...    | 2,907     | 1,690  | 172             | 580      | 876      | 1,696    | 28,705        | 32,029  | ...             | 784      | 289      | 263      | 5,176         | 6,542  |
| Mawokota    | ...    | 1,421     | ...    | ...             | 390      | 870      | 440      | 13,137        | 14,837  | 80              | ...      | 70       | 46       | 1,343         | 1,519  |
| Busuju      | ...    | ...       | ...    | 656             | 390      | 1,476    | 2,131    | 5,871         | 10,524  | 355             | 539      | 198      | 1,439    | 3,459         | 5,970  |
| Singo       | ...    | ...       | ...    | 2,489           | 4,017    | 4,595    | 962      | 43,415        | 55,478  | ...             | 160      | ...      | 100      | 5,208         | 5,468  |
| Grand Total | 6,678  | 32,226    | 5,612  | 5,061           | 7,131    | 14,969   | 15,938   | 265,022       | 308,121 | 570             | 2,042    | 889      | 2,025    | 29,797        | 35,313 |

### General.

Among the more important of the minor crops, cassava, sweet potatoes and rice may be mentioned. To our stock of cassava we have added another variety making eight in all; they all belong to the *Manihot Palmata* group. We have not been able to continue the tests with this crop owing to the lack of suitable land to allow of the respective varieties being laid down side by side. We have nevertheless worked up a stock of sets for distribution.

Similarly with the sweet potato, several other obscure varieties have been added. These were mostly obtained through the native agricultural instructors and were brought in from remote parts. Yields from the varieties of these crops so far tested are to be found in previous reports.

### **Rice.**

The rice crop was grown entirely in the swamp area of the plantation and was partly irrigated. The yields were satisfactory apart from loss caused by "Rice Blast." This crop will succeed only under thoroughly wet conditions. The ears on the plants on the outside edge of the plots and slightly raised above the general level of the plot were empty. Several varieties new to the country have been obtained for test, these include six Indian and six Coast or Mombasa varieties, and they are some of the very best rices.

### **Kampala Swamp.**

The swamp work was carried on throughout the year along the usual lines. The annual vote for this work only allows for the employment of 20 men; it has been found, however, that this does not allow much progressive work to be done, as the large area which has been brought under cultivation entails considerable labour in keeping it in order. The planting of sugar cane has helped wonderfully in clearing the land which had been partly drained. It has moreover brought in a fair amount of revenue, as it is readily bought by the natives. It is a crop which might with advantage be advocated for the purposes of cleaning and breaking up the heavy swamp land, for we find the parts which have been planted up with this crop now in a very fine condition.

T. D. MAITLAND,  
*Botanist.*

## **ANNUAL REPORT**

ON THE

## **GOVERNMENT SEED FARMS IN TESO DISTRICT.**

### **Meteorological Report.**

Table No. I at the end of this report gives a summary of the rainfall and temperatures taken at Serere and Simsa farms during the past year.

The rains were well distributed throughout the year, and the rainfall was ample for all crop needs.

There was no abnormal feature as regards the weather during the year, except that hailstorms were rather more prevalent than usual throughout the Province, although all three farms escaped damage.

### **Crop of Year 1921.**

The results of the cotton crop of 1921 could not be included in the last annual report, and these are shown on Table No. II at the end of this report.

In the last annual report it was stated that the crop was likely to be a poor one, due to climatic and other conditions. A glance at the column under yields per acre will show that the forecast was a correct one. It seems likely that, in addition to environmental causes, fungoid organisms played an important part in the result, as will be shown later.

The Simsa Farm crop, although not of very high yield, was the most successful, the quality of the lint being better, and there was much less disease. This result was gratifying in view of the light unretentive nature of the soils on this farm, and the extraordinary dry season, and indicates that the system adopted of crop rotations supplemented by green manuring is having an appreciable effect in maintaining the fertility of the soil. This system is referred to later on in this report.



## Crop of Year 1922.

### (A) SERERE.

#### 1. Cotton.

The main crop consisted wholly of the Allen variety, the seed being obtained from Selection No. 14, originally found in 1915, and propagated on the farms since then. The Allen variety has not been tried in general distribution since 1913, when it gave a heavy yield, but developed a weakness in the fibre, and was abandoned on that account.

The selection in question has maintained its characteristics throughout the experimental period of seven years, and appears to have become acclimatised. It was therefore deemed worthy of a trial in general distribution at some future date.

The crop was put in under excellent conditions. The double-furrow disc plough was again used, and the greater part of the area under cotton was ploughed by this implement, although at less depth than the previous year. The seed was sound, germination was good and an excellent stand of plants obtained.

The crop made good progress up to the middle of September, when some deterioration was observed on the first sown cotton. A block of five acres sown in the first half of May had reached the bearing stage, when flowering and bolling should have been profuse, if a successful early crop was to be obtained. However the leaf took on a sickly appearance and curled up, there was heavy bud shedding, and any bolls which did set were later on seen to be deformed and abnormal. The above condition spread over all the May sown cotton.

Up to the end of October the second early and late cotton had been free from the above diseased condition, but early in November it was seen that the latter had become likewise affected. A partial crop failure was predicted, and material was forwarded to the Mycologist for investigation. A visit from the latter has been promised, but has not so far materialised.

It seems probable that the previous year's crop was similarly affected, although in a minor degree.

#### SELECTION EXPERIMENT PLOTS.

The following procedure is now used in regard to the propagation of selections on the farms:—

- 1st year, seed from individual plant selections are sown in single rows.
- 2nd year, seed from single row selections are sown in ten-row plots.
- 3rd year, seed from ten-row plots are sown in three-acre plots.
- 4th year, seed from three-acre plots are sown as the main crop on either of the farms.
- 5th year, seed from the main crop is sown in a segregated area by native peasants, such as Kaduguru area.
- 6th year, seed from the the segregated area is sown over the whole of Serere County.
- 7th year, seed from Serere County is sown in general distribution.

It is thus seen that six years must elapse between the original selection of any type and its ultimate distribution throughout the country, and during that period it is under continuous observation, and any defects noted.

In 1921 there were numerous single-row and ten-row experiments. They were all early sown, and in consequence suffered rather more than the main crop from the adverse conditions prevailing. So much so that only a very few of them could be retained for propagation in 1922.

Of the ten-row experimental plots in 1921, five were retained, and sown in three-acre plots in 1922. These were:—

Nyasaland No. 17, Allen Nos. 11 and 14, and Sunflower Nos. 12 and 14.

Of the 36 single-row experiments in 1921, only ten were retained and sown in ten-row plots in 1922, these being:—

Sunflower Nos. 2, 3, 4, 7, 10, and Allen Nos. 2, 4, 6, 7, and 10.

The results of the examination of the above selections are shown in Table III at the end of this report.

The samples were all ginned by the hand-gin and the seed was hand-picked before sowing.

The plots were sown in the latter end of May, and the seed germinated well. The crop had an excellent appearance up to the end of September, when the diseased condition manifested itself as previously stated. This condition spread throughout the plots but was probably least severe on the plot of Nyasaland No. 17.

In consequence of this unfortunate condition, it has been quite impossible to carry out any selection work on the above plots.

#### INDIVIDUAL SELECTIONS.

A large number of individual selections were made on the crop of 1921-22, 31 of which were sown in single rows at the same time as above plots, and were similarly affected by disease.

### 2. Minor Crops.

#### TOBACCO.

Three new varieties were sown, *viz.*:—Gold Leaf, Warne and Conqueror, imported from Nyasaland, as well as the two varieties, Pusa and Assam, imported the previous year.

Germination in the seed beds was not very good in the first instance, and so planting out was slow. Ultimately areas of one-sixth acre in size were planted out, and the crop made good progress. For reasons of economy in labour it was decided to allow the crop to run to seed, and to sacrifice the leaf for seed production.

A large quantity of excellent seed was thus obtained from all five varieties.

#### MAIZE.

One acre of maize, var. Hickory King, was sown and yielded 1,200 lbs., the quality being rather poor.

Four new varieties received from South Africa, named Potchefstroom Pearl, Ladysmith White, Salisbury White and Hickory King, were sown in one-quarter-acre plots in May, the plots being separated by areas of other crops to prevent crossing.

Germination was good and growth was well maintained up to the fertilising stage, when rust appeared on the leaf. This probably affected the yield, which was as follows:—

|                          | LBS. |                      | LBS. |
|--------------------------|------|----------------------|------|
| Potchefstroom Pearl .... | 233  | Salisbury White .... | 403  |
| Ladysmith White ....     | 217  | Hickory King ....    | 229  |

The best cobs have been selected for further experiment next year.

#### KAFFIR CORN.

Seed imported from South Africa was sown in a  $\frac{1}{4}$ -acre plot in May. Germination was good, and the crop made good growth. Rust soon appeared on the leaf, and no seed set on first flower spikes. The plants were cut down in September, and further growth produced flower spikes, which bore a small crop of seed, of which 20 lbs was collected for further experiment.

#### SIMSIM (KAVIRONDO VAR.).

One acre was broadcasted in April. Germination was good. Crop was harvested in July, and yielded 538 lbs., the sample of seed being good.

#### JUTE.

A small plot was sown. Germination was rather poor, and the trial did not yield any result.

#### RICE.

Eight varieties were sown, of which six were Indian importations and two local varieties.

Nurseries were sown in February, and transplanting was done in April, the delay being due to the ravages of insects on the young plants in the nursery, which disappeared with the advent of the rains in March.



One or two of the new varieties did well, but the yields were much under those of the local varieties. A further trial will be made next season. The yields per acre were as follows :—

| INDIAN.           |     |     | LBS. | LOCAL.  |     |     | LBS. |
|-------------------|-----|-----|------|---------|-----|-----|------|
| Batulasi Aus.     | ... | ... | 380  | Sindano | ... | ... | 420  |
| Kataktari Aus.    | ... | ... | 288  | Karundi | ... | ... | 520  |
| Pallavgori Aus.   | ... | ... | 252  |         |     |     |      |
| Satlia Aus.       | ... | ... | 328  |         |     |     |      |
| Meghie Aus.       | ... | ... | 248  |         |     |     |      |
| Chakladhanga Aus. | ... | ... | 84   |         |     |     |      |

#### SWEET POTATOES.

An interesting experiment with nine varieties of locally grown sweet potatoes was carried out. The sets were planted out in plots one-sixth acre in size in April and May. The season was a favourable one for this crop, and a successful yield was obtained.

A test was carried out to find the starch content of the different varieties.

#### INDIAN GRAM.

A quarter-acre plot sown in April germinated well, and yielded at the rate of 200 lbs. per acre.

#### SOY BEANS.

Four varieties were sown in one-quarter-acre plots in April. Germination was good, and the crop was harvested in July. The average yield from the plots was 290 lbs. per acre, which is low by comparison with other years.

#### CHILLIES.

Two varieties were sown in beds in April, and planted out in June between bananas. These were the small common variety from Busoga, and the large red variety from India. Both kinds can be grown with success, and the latter is a less difficult crop to handle, as it is easily picked, whereas the small chilli is difficult to pick owing to the irritant effect of the pod on the hands and eyes of the pickers.

Only one picking was made, the bulk of the crop being left on the bushes on account of shortage of labour.

### 3. Nurseries and Tree Planting.

During the year the following seeds of trees, etc., were received and sown in the nurseries :—

#### FRUITS.

|                                   |                                  |
|-----------------------------------|----------------------------------|
| Anona Cherimolia (Cherimoyer)     | Eriobotrya Japonica (Loquat)     |
| Diospyros Discolor (Velvet Apple) | Anona Muricata (Soursop)         |
| Citrus Medica (Lemon)             | Carica Papaya (Papaw)            |
| do Decumana (Pomelo)              | Morus Nigra (Mulberry)           |
| do Medica var. acida (Lime)       | Eugenia Jambos (Rose Apple)      |
| do Sp. in var. (Orange)           | Punica Granatum (Pomegranate)    |
| Psidium Guajava (Cherry Guava)    | Persia Gratissima (Avocado Pear) |
| do Cattleianum (Common Guava)     | Cyphomanda Betacea (Tomato)      |

#### SHADE TREES, ETC.

|                       |                                  |
|-----------------------|----------------------------------|
| Poinciana Regia       | Cinnamomum Zeylanicum (Cinnamon) |
| Cedrela Toona         | Elaeio Guineensis (Palm Nut)     |
| Measopis Berchimoides | Eugenia Caryophyllata (Clove)    |
| Leucaena Glauca       | Picralima Klainiana              |
| Widdringtonia Whytei  | Encephalartos sp.                |

Germination of most of above was good, and a number of plants have been obtained for next year's planting out and general distribution.

The season was a favourable one for the planting out of trees, etc. Trees and shrubs for ornamental purposes, avenues and wind breaks were set out, and the laying out of the ground around the farm buildings was carried out successfully.

The following were planted out :—

|                    |                     |
|--------------------|---------------------|
| Grevillea Robusta  | Poinciana Regia     |
| Eucalyptus Robusta | Spathodea Nilotica  |
| Albizia Lebbek     | Areca Catechu       |
| Cedrela Toona      | Persea Graissima    |
| Juniperus Cedrus   | Mangifera Indica    |
| Pinus Canariensis  | Carica Papaya, etc. |

There were no plants available for general distribution last year.

#### 4. Crop Areas.

The following is a list of crop areas under cultivation:—

|                    | Acres.        |               | Acres.         |
|--------------------|---------------|---------------|----------------|
| Cotton ...         | 70            | Gram ...      | $\frac{1}{4}$  |
| Maize ...          | 2             | Soy Bean ...  | $1\frac{1}{4}$ |
| Simsim ...         | 2             | Chillies ...  | $\frac{1}{4}$  |
| Kaffir Corn ...    | $\frac{1}{4}$ | Bananas ...   | 2              |
| Tobacco ...        | 1             | Trees ...     | 10             |
| Rice ...           | 3             | Nurseries ... | 3              |
| Sweet Potatoes ... | 3             |               |                |
|                    |               | TOTAL ...     | 98             |

#### 5. Instruction Work.

Last year a beginning was made with instruction work on the farm, although this branch has not received the attention it deserves.

A few boys were sent in by the District Commissioner, Gulu, for instruction in ploughing and general cultivation. Four of the Lango Chiefs also sent in boys for training in general farm practice. The latter remained five months at Serere, and showed considerable aptitude in their work. They are now employed by the chiefs as headmen in charge of their private shambas, and are said to be working well.

It is hoped to develop this side of the farm work in the near future; so that every Chief, who wishes it, can have lads trained, who will afterwards become headmen and supervisors under the chiefs, and assist in bringing in better methods of cultivation in their several areas.

#### 6. Labour.

During the year some difficulty was experienced with labour, the attendance being particularly poor in the months of April and May, which are the most important months as regards cultivation and sowing.

#### 7. Live Stock.

An outbreak of rinderpest occurred in May amongst the work oxen, a large number of animals being affected, of which 11 died.

This outbreak, occurring in the most important season of cultivation, tended to throw the smooth running of the farm out of gear for a time.

#### (B) SIMSA FARM.

This farm was carried on as usual, as an auxilliary to the Serere Station, with a native overseer in charge and an average daily attendance of about 25 labourers, and occasional visits of supervision by an officer of this department.

The season was a favourable one for this farm, and crop results were mostly good. The following is a list of crops grown with areas and yields obtained:—

| NAME OF CROP.       | Area in Acres.  | Yield per Acre, lbs. | Total Yield, lbs. | REMARKS.                       |
|---------------------|-----------------|----------------------|-------------------|--------------------------------|
| Cotton ...          | 40              | 250                  | 10,000            | —                              |
| Ground Nuts ...     | $9\frac{1}{2}$  | 600                  | 5,735             | —                              |
| Maize ...           | 5               | 900                  | 4,500             | —                              |
| Millet (Matama) ... | 3               | 800                  | 2,420             | —                              |
| Millet (Bulo) ...   | 3               | 400                  | 1,200             | —                              |
| Beans ...           | $2\frac{1}{2}$  | 220                  | 550               | —                              |
| Chillies ...        | $\frac{1}{4}$   | 1,000                | 250               | —                              |
| Simsim ...          | 1               | 160                  | 160               | —                              |
| Peanuts ...         | 1               | —                    | —                 | Failed.                        |
| Tobacco ...         | $1\frac{1}{4}$  | 600                  | 750               | —                              |
| Lucerne ...         | $\frac{1}{2}$   | —                    | —                 | No yield.                      |
| Cassava ...         | $2\frac{1}{4}$  | —                    | —                 | Roots not lifted.              |
| Mweli ...           | $1\frac{1}{2}$  | —                    | —                 | Failed.                        |
| Sugar Cane ...      | $1\frac{1}{2}$  | —                    | —                 | Canes being sold ret.          |
| Sweet Potatoes ...  | $1\frac{1}{4}$  | 800                  | 1,000             | Part of crop lifted and dried. |
| TOTAL AREA ...      | $73\frac{1}{2}$ | —                    | —                 | —                              |



## 1. Cotton.

The cotton crop on this farm consisted entirely of Selection No. 21 of the Nyasaland variety, grown on Serere Farm the previous year.

The land was prepared as follows:—Ploughed in February, by single furrow mould board plough, and sown with either Giant Bean, Groundnuts or Bulo. Towards the end of April above crops were ploughed in as green manure, and harrowed well with disc and drag harrows to break up the clods and consolidate the ground by the trampling of the oxen. Cotton requires a firm seed bed, and it is important that the ground should be firmly pressed by some means especially after ploughing in green crops, if a satisfactory plant of cotton is to be obtained.

Sowing began on 15th May, and was continued until the first week in July. Germination was good all over. Some damage was done to the young plants by white ants, one plot of early cotton in particular being badly thinned out by these pests. The only remedy against this attack appears to be extra thick sowing, and less severe thinning to allow for subsequent loss.

Early in October severe storms passed over the farm which did some damage to the early crop, the plants being laid flat, and subsequently there was considerable bud shedding.

The crop made a quick recovery later, the plants being well covered with bolls, and picking began in November, about 150 lbs. per acre having been picked by the end of the year.

The quality of the cotton is very good, and percentage of stain small.

Insect pests have not done much damage so far, and there is no evidence of the disease affecting the Serere crop.

## 2. Minor Crops.

### TOBACCO.

Nurseries were sown in April with three new varieties imported from Nyasaland, viz.—Gold Leaf, Warne and Conqueror, also two previous importations—Pusa and Assam.

Planting out took place in June and July, being somewhat delayed by dry spells of weather, but ultimately an excellent plant was obtained, and the crop was a very successful one. The leaf was cut and hung up to dry in September—October and at this date it is still hanging, the continuance of the dry weather since 1st November preventing its being touched. The quality of the leaf appears to have been exceptionally good this year, and the new varieties appear to suit the climate.

There was no damage by insects or storms.

### GROUNDNUTS.

This crop does well on the light soils of Simsa. The past season's crop was a successful one, and the yield would have been larger if a portion of the crop had not been left too long in the ground and spoiled. The digging up and drying of the nuts is a slow job, and one specially suitable for women and children. The latter do not come forward readily for the lighter jobs on the farm, although offered daily payment in cash or kind.

Selected large seed from the previous year's crop is used for sowing this crop, the smaller seed being sown for ploughing in as manure.

### MILLETS—BULO.

A small area was sown with selected seed for food and seed purposes.

### MILLETS—MATAMA.

This crop was again tried and proved successful. The yield shown is small, but reaping was delayed for lack of labour, and much of the seed was taken by birds, etc.

### MILLETS—MWELE.

This crop came up well, and would have given a fair yield, but on account of labour economy the crop could not be reaped when mature.

### MAIZE.

Seed of the var. Hickory King was sown and gave a successful crop. The yield, although not large, was satisfactory, considering the light nature of the soil, and the quality of the produce was excellent.

**BEANS.**

Small areas of Soy and other varieties were sown. The former was successful but the latter failed.

**SIMSIM.**

This crop was tried for the first time on this farm, but the results were poor, the soil being too light and unretentive for this crop.

**CHILLIES.**

A quarter-acre plot of the small Busoga var. was sown in May, the seed being broadcasted in the open with surprisingly good results. The seed germinated well, and, although white ants took a number of the young plants, a satisfactory stand of plants was obtained. There was no shade of any kind, but the plot was sheltered from the winds by a belt of trees. Owing to labour shortage only one picking was taken, equal to about 1,000 lbs. per acre, and the rest of the crop was lost.

This experiment is interesting as showing that the crop can be grown with success on the lighter soils. It might be introduced among the natives of Teso and Lango, and the seed will be kept for that purpose.

**3. Live Stock.**

An outbreak of rinderpest occurred among the work oxen in August, and resulted in the death of nine animals. Luckily the ploughing season was practically over, and so the outbreak did not upset the season's work as it might have done earlier in the year.

**4. Buildings.**

Towards the end of the year a seed store was built on the farm. This store, which is of a permanent rat and ant proof nature, will be used mainly as a cotton seed depôt for the Eastern side of Teso and Lango districts. It will also form a useful adjunct to the farm buildings, which were built in 1916 of a temporary wattle and daub nature, and are now very dilapidated.

**(C) KUMI FARM.**

This farm was run as heretofore as an auxilliary to Serere, and as a centre for ploughing instruction. It was found to be impossible to carry on a ploughing school last year, for reasons set forth under ploughing, and so a number of oxen were sent from Simsa to Kumi to plough the land in readiness for cotton. An area of about 18 acres was ploughed, of which 17 acres were put under cotton.

For reasons of economy the labour employed was cut down to one native headman and five labourers at a cost of about Shs. 60 per month and it was decided to concentrate on the cotton crop only. Sowing began about the middle of May, the seed used being derived from Selection No. 3 of the Sunflower var.

Germination was good and the crop made good progress throughout the year. For the first time for some years, the cotton crop on this farm escaped damage by hail and severe rainstorms, and so, when picking began, the plants were standing erect, well branched and well balled.

By the end of the year 130 lbs. per acre had been picked, the cotton being of very good quality and percentage of stain low.

**Ploughing Instruction and Development.**

During the year under review little or no progress can be recorded in the matter of the development of the use of ox-drawn ploughs by natives.

There were important circumstances against development—(a) the small monetary return from the previous year's cotton crop, resulting in an almost entire absence of ready money in the hands of natives to buy anything with; and (b) the sporadic outbreaks of cattle disease, necessitating restrictions in the movement of cattle. The former prevented the purchase of implements and spare parts, and the latter acted against any assembly of oxen for instruction purposes.

**Other Crops.**

Large quantities of ground nuts and simsim have been marketed during the year, at medium prices, which tended upwards towards the end of the year. Both crops gave satisfactory yields, the late simsim crop being a specially good one.

**R. G. HARPER,**  
*Senior Agricultural Officer.*



TABLE I.

**Rainfall and Temperatures at Serere and Simsa Farms.****A. SERERE.**

| RAINFALL. |     |             |         | TEMPERATURES.    |                  |                   |                  |
|-----------|-----|-------------|---------|------------------|------------------|-------------------|------------------|
| Month.    |     | Rainy days. | Inches. | Average maximum. | Average minimum. | Highest recorded. | Lowest recorded. |
| January   | ... | 1           | 0.20    | 90.2             | 70.7             | 95                | 68               |
| February  | ... | 13          | 3.20    | 88.4             | 67.6             | 95                | 63               |
| March     | ... | 15          | 6.06    | 85.3             | 67.8             | 92                | 60               |
| April     | ... | 12          | 3.78    | 83.8             | 65.6             | 91                | 61               |
| May       | ... | 13          | 4.82    | 81.4             | 65.7             | 86                | 63               |
| June      | ... | 10          | 6.91    | 81.4             | 65.8             | 85                | 62               |
| July      | ... | 13          | 2.64    | 80.5             | 65.2             | 82                | 63               |
| August    | ... | 14          | 9.27    | 80.7             | 64.1             | 86                | 61               |
| September | ... | 17          | 4.04    | 83.8             | 64.7             | 89                | 61               |
| October   | ... | 14          | 8.61    | 85.7             | 65.3             | 89                | 63               |
| November  | ... | 4           | 2.85    | 89.7             | 66.2             | 93                | 64               |
| December  | ... | 4           | 1.50    | 88.8             | 65.2             | 94                | 62               |
| TOTAL     |     | 130         | 53.88   | —                | —                | —                 | —                |

**B. SIMSA.**

| RAINFALL. |     |             |         | TEMPERATURES.    |                  |                   |                  |
|-----------|-----|-------------|---------|------------------|------------------|-------------------|------------------|
| Month.    |     | Rainy days. | Inches. | Average maximum. | Average minimum. | Highest recorded. | Lowest recorded. |
| January   | ... | 3           | 2.75    | 95.0             | 64.0             | 102               | 56               |
| February  | ... | 8           | 1.60    | 93.1             | 65.2             | 100               | 61               |
| March     | ... | 12          | 3.66    | 88.0             | 64.0             | 98                | 60               |
| April     | ... | 14          | 5.30    | 87.0             | 65.0             | 99                | 61               |
| May       | ... | 15          | 5.42    | 86.5             | 65.0             | 90                | 62               |
| June      | ... | 14          | 5.96    | 86.0             | 64.0             | 93                | 61               |
| July      | ... | 12          | 4.31    | 86.0             | 63.0             | 90                | 60               |
| August    | ... | 15          | 8.07    | 85.4             | 63.8             | 92                | 61               |
| September | ... | 14          | 5.66    | 89.0             | 65.2             | 95                | 63               |
| October   | ... | 16          | 6.92    | 92.4             | 65.9             | 98                | 63               |
| November  | ... | 4           | 0.77    | 97.3             | 65.2             | 101               | 62               |
| December  | ... | 4           | 0.31    | 95.9             | 64.5             | 103               | 61               |
| TOTAL     |     | 131         | 50.73   | —                | —                | —                 | —                |

TABLE II.

**Main Crop Results, 1921.**

| Plantation. | Variety.  | No. of Selection. | Area Acres. | Total yield. A. | Total yield. B. | Yield per acre. | Percentage of lint. | Staple.                                 | REMARKS.                                                                            |
|-------------|-----------|-------------------|-------------|-----------------|-----------------|-----------------|---------------------|-----------------------------------------|-------------------------------------------------------------------------------------|
| Serere ...  | Allen ... | 14                | 18          | 3,563           | 1,184           | 263             | 29.21               | 1 $\frac{1}{4}$ in. Fair strength.      | Has maintained its properties of length and silkiness in a season of extra drought. |
| do          | Sunflower | 7                 | 18          | 4,193           | 1,289           | 304             | 30.24               | 1 $\frac{3}{8}$ in. Good strength.      | Gave the best result of the three.                                                  |
| do          | Nyasaland | 21                | 18          | 3,083           | 981             | 225             | 29.35               | 1 $\frac{3}{8}$ in. Good strength.      | Gave the least satisfactory result both as to yield and quality of staple.          |
| Simsa ...   | Sunflower | 3                 | 30          | 5,603           | 1,815           | 247             | 30.30               | 1 $\frac{3}{8}$ in. Very good strength. | An excellent sample of cotton, regular and strong.                                  |
| Kumi ...    | do        | 6                 | 6           | 867             | 221             | 181             | 30.21               | 1 $\frac{3}{8}$ in. Fair strength.      | Crop affected by adverse circumstances. Sample of moderate appearance and quality.  |

The above cotton was ginned by the Bombay Uganda Co., Ltd., at their Rappayi ginnery and a careful record kept of the results.

TABLE III.

RESULTS OF EXAMINATION OF SELECTION EXPERIMENTS — YEAR, 1921-22.

| No.                     | Variety.  | No. of Parent. | Yield lbs. | Average length of staple, inches. | Strength.     | Regularity.     | Fineness.   | Percentage of Lint. | Seed.                      | REMARKS.                                                             |
|-------------------------|-----------|----------------|------------|-----------------------------------|---------------|-----------------|-------------|---------------------|----------------------------|----------------------------------------------------------------------|
| <b>A. 10-Row Plots.</b> |           |                |            |                                   |               |                 |             |                     |                            |                                                                      |
| 17                      | Nyasaland | 30/18          | 70         | 1 $\frac{3}{8}$                   | Strong        | Fairly regular. | Fine        | 32.9                | Large. Fuzz covered        | Sample of very good colour, strong and lustrous.                     |
| 11                      | Allen     | 25/29/17       | 48         | 1 $\frac{1}{4}$                   | Strong        | Regular         | Very fine   | 31.2                | Small. Sparsely covered.   | A nice sample of good colour and lustre.                             |
| 14                      | "         | 25/29/16       | 60         | 1 $\frac{1}{4}$                   | Fairly strong | Fairly regular. | Very fine   | 30.0                | Medium size. Fuzz covered. | A typical sample of Allen of good length and lustre.                 |
| 12                      | Sunflower | 7/26/7         | 56         | 1 $\frac{3}{8}$                   | Strong        | Regular         | Very fine   | 32.1                | Large. Fuzz covered        | A pleasing sample. Distribution good.                                |
| 14                      | "         | 18/14/10       | 50         | 1 $\frac{3}{8}$                   | Fairly strong | Fairly regular. | Very fine   | 30.2                | Small. Sparsely covered.   | A fair sample. Distribution not very good.                           |
| <b>B. 1-Row Plots.</b>  |           |                |            |                                   |               |                 |             |                     |                            |                                                                      |
| 2                       | Allen     | 5/14           | —          | 1 $\frac{3}{8}$                   | Fairly strong | Regular         | Fine        | 27.5                | Small. Sparsely covered.   | A moderate sample. Some immature fibre.                              |
| 4                       | "         | 6/14           | —          | 1 $\frac{3}{8}$                   | Strong        | Regular         | Fine        | 82.2                | Medium size. Well covered. | do do                                                                |
| 6                       | "         | 6/14           | —          | 1 $\frac{1}{4}$                   | Fairly strong | Very regular    | Very fine   | 31.0                | Small. Well covered        | A nice sample. Some weakness.                                        |
| 7                       | "         | 6/14           | —          | 1 $\frac{1}{4}$                   | Fairly strong | Fairly regular. | Fine        | 28.1                | Small. Sparsely covered.   | A fair sample. Some weak fibres.                                     |
| 10                      | "         | 6/14           | —          | 1 $\frac{3}{8}$                   | Strong        | Regular         | Very fine   | 30.2                | Large. Well covered        | An average sample of good strength.                                  |
| 2                       | Sunflower | 1/3            | —          | 1 $\frac{1}{4}$                   | Strong        | Regular         | Fine        | 30.4                | Large. Well covered        | do do                                                                |
| 3                       | "         | 1/3            | —          | 1 $\frac{1}{4}$                   | Very strong   | Regular         | Very fine   | 28.3                | Small. Sparsely covered.   | An excellent sample.                                                 |
| 4                       | "         | 7/26/7         | —          | 1 $\frac{3}{8}$                   | Fairly strong | Very regular    | Fine        | 32.3                | Large. Well covered        | A good sample except for some weakness. Distribution extremely good. |
| 7                       | "         | 3/9            | —          | 1 $\frac{3}{8}$                   | Very strong   | Regular         | Fine        | 32.3                | Medium size. Well covered. | A nice sample of good strength.                                      |
| 10                      | "         | 3/9            | —          | 1 $\frac{1}{4}$                   | Very strong   | Regular         | Fairly fine | 28.8                | Small. Sparsely covered.   | do do                                                                |



# ANNUAL REPORT

## OF

# THE GOVERNMENT MYCOLOGIST.

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1. I have been on duty during the whole year. During part of the time, I attended to entomological matters as well as to my own duties.

2. As in former years, I have been greatly indebted to the Directors of the Royal Botanic Gardens, Kew, and the Imperial Bureau of Mycology for the identification of material, and I beg to thank both officials for their help.

3. I have toured during the year in Budama, Bunyuli and Bugishu districts and among the Sese Islands, and I have paid, in addition, numerous visits to estates in the Kyagwe, Kampala, Mubende and other districts at the request of owners or managers.

4. The cereal disease investigations mentioned in last year's report were brought to a point beyond which it was impossible to go under the circumstances, and the results have been incorporated for local use in Circular No. 8 which was published at the end of November. A further circular dealing with the local diseases of coffee is almost completed and will be published as soon as possible. Minor matters are omitted from this report.

### Coffee.

5. There is nothing of importance to add to the mentions of the diseases of this crop in past reports. The usual leaf fungi, *Hemileia*, *Cercospora*, and *Colletotrichum*, have been in evidence, and the two latter fungi have been found also on the berries, but it was only in very few cases that real harm was wrought by them. Likewise, cases of damaged beans have been few. Two minute fungi were found for the first time on coffee leaves, but they were of minor importance. Their names have not yet been received from home. The usual cases of anthracnose of branches occurred, but none of them could be attributed to a cause that was not well-known. A mention of the fungus of root rot, a disease that attacks coffee and many other hosts in Uganda, will be found under the heading of *Hevea*.

### Hevea.

6. A few cases of dieback were sent for examination. In one of these, the fungus present, *Botryodiplodia theobromæ* Pat., had progressed from the upper parts of the tree well into the roots. Bark and cortex diseases have not been in evidence, and no new cases of root disease have been reported. It might be mentioned here that, during the year, two finds of the sporophores of the fungus causing the disease which is locally known as root rot and which occurs on coffee, tea, cocoa, *Hevea*, ceara, mango, *Hibiscus*, *Eucalyptus*, roses, etc., and on dead stumps, were made by the Botanist in Entebbe. In one case, the sporophores were associated with the root rot on *Hevea*, and, in the other, with an old stump. The sporophores had been the object of a search extending over several years, and their discovery enables the fungus of the root rot to be definitely identified for the first time. The fungus was originally suspected of being a species of agaric, and it is now known to be *Armillaria mellea* (Vahl.) Fr. a form which attacks many hosts and is widely distributed. The Uganda sporophores are much smaller than those of the European species. The brown bast experiments mentioned in last year's report have been carried on, and the trees have been examined after a year's tapping. There are five series of tappings varying from daily and alternate days throughout the year to alternate days for three months and rest for three months and so on, and it falls to be recorded that, though certain series of trees might have been expected to show a greater incidence of brown bast than others, there is such a complete absence of the trouble that the experiments are totally inconclusive so far as they have gone. A little mouldy rot of the tapped surface is in evidence. It appeared during a spell of wet weather. Other *Hevea* diseases, for example, patch canker, have been negligible during 1922, but it is to be expected that the resumption of regular tapping throughout the country will lead to the reappearance of the common stem troubles. The leaf mildew (*Oidium* sp.) reported for the first time in 1921 occurred on several estates, and it is therefore extending its range. Its effects were as before—deformation and loss of a few leaves.

### Cotton.

7. Several severe outbreaks of grey or areolate leaf mildew (*Ramularia areola* Atk.) were recorded. The fungus occurred only on the mature leaves of the plant, and in some of the material examined it was found to have caused a certain amount of defoliation. Continued moist weather was responsible for its appearance on a larger scale than usual, and the attacks died out altogether on the cessation of the rains. Boll anthracnose might have been expected to be common, but it was not so, owing, perhaps, to the fact that when the conditions were favourable to the anthracnose fungus, the bolls were still hard and green and able to resist infection. On the whole, cotton boll anthracnose is not so common in Uganda as might be expected.

### Sugar Cane.

8. *Leptosphaeria sacchari* van Breda and *Helminthosporium sacchari* Butl. are fairly common on the leaves of sugar cane in Uganda and have been known for several years. There now falls to be recorded the occurrence of a rot of the stem which has been found to be fairly widespread since its original discovery on the Kampala Plantation. Three fungi, *Colletotrichum falcatum* Went., *Melanconium sacchari* Massee, and a species of *Cephalosporium*, have been found in association with the disease, but no definite pronouncement as to which fungus is the cause of the disease can be made pending further investigation. It is hoped that the matter will be cleared up soon, for the disease is apparently capable of being destructive.

### Other Crops.

9. No diseases of cocoa or tea have been investigated during the year. The dieback of chillies due to *Vermicularia capsici* Syd. was identified for the first time. The outbreak of the disease coincided with an unusual period of rains in the month of October, and the symptoms were exactly those described for the same disease in India. Individual flowers drooped and dried up at the beginning of the attack. Many fell off the plants, and so prevented the fungus of the disease from passing into the adjoining tissues, but others were found to persist and give opportunity for growth into the stems. Lateral branches were thus killed off, and in some diseased plants the whole of the upper portions died. The bark of the stem became brown and then white in longitudinal strips. The dieback was not of a deadly nature, but it is evidently capable of causing great loss in an unfavourable year. An interesting root disease of *Grevillea robusta* has been under investigation during 1922. *Grevillea* has been widely planted in townships and as a shade and wind-break for coffee, and its diseases are therefore assuming a certain amount of importance. Many well-grown trees have died on road-sides and among coffee, and it has been usual to refer their death to white ants, for the examination of a dead or dying tree very often reveals only the presence and work of the insects. It is now known, however, that in most cases, if not in all, death is due to a root disease caused by the parasitism of a species of *Rhizoctonia*. The morphology of the fungus has been studied as it occurs both in nature and in culture, and its supposed *Corticium* stage has been discovered. The latter is apparently strictly parasitic for it has not developed in culture. The *Rhizoctonia* may prove to be a new species, and it is hoped to publish an account of it in due course. In view of the presence among coffee of *Grevillea* affected with *Rhizoctonia* disease, there arises the important question as to whether the fungus will pass from *Grevillea* to attack adjacent coffee, and infection experiments to test this point have been in progress for some time. Up to date the results have been negative.

In the course of routine work during the past few years it has been found that a species of *Colletotrichum* indistinguishable from *Colletotrichum coffeanum* Noack, occurs under circumstances which at times point to its parasitism and at others to its saprophytism. During 1922, a collection of cultures of the fungus from as many host plants as possible was set up with a view to a morphological comparison of the various strains and their testing by a series of cross-inoculation experiments. The strains included the *Colletotrichum* from coffee, tea, avocado pear, *Anona muricata*, vanilla, oil-palm nuts, papaw fruits, mango (anthracnose of floral branches), and fruits of *Voacanga* sp. The inoculation experiments are still in progress, and the results will be published when the work is completed. It may also be shown that the various strains of the *Colletotrichum* are conidial forms of *Glomerella cingulata* S. and v. S.

In last year's report, it was mentioned that a species of *Fusarium* was causing a destructive wilt of cashew nut seedlings in the Government Plantation, Kampala. The



fungus was studied and has been labelled *Fusarium udum* Butl. It occurred in the same locality on young plants of *Grevillea robusta*, rose apple, and loquat, and it was made to infect its host in India where it was originally studied, viz., pigeon pea. An account of this *Fusarium* was published in the Kew Bulletin, pp. 269—291, No. 9 of 1922.

A second occurrence of the nematode *Heterodera radiculicola* Greef was noted on the roots of *Thunbergia erecta* T. Anders. in the Entebbe Gardens. In continuance of the rice disease investigation outlined in last year's report, the rice areas of the Eastern Province and the Sese Islands were inspected. The presence of the diseased condition of rice described in Circular No. 8 and referred to as blast disease was demonstrated in the Eastern Province, and was confirmed several times from material sent to the laboratory from the field, and the disease has also been proved to be present in Sese.

W. SMALL,

*Mycologist.*

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## ANNUAL REPORT

OF

## THE GOVERNMENT ENTOMOLOGIST.

---

I was absent on leave from the Protectorate during the period April 18th to November 21st. My early departure was sanctioned by the Secretary of State for the Colonies to enable me as a Carnegie Student to visit the United States during the time most favourable for the study of cotton pests. The Mycologist attended to routine work during my absence.

Visits were paid during the year to eight estates managed by Europeans and many plots of cotton, etc., cultivated by natives were examined.

Several insects new as pests in Uganda are recorded in the following account of insects of economic importance:—

### On Coffee.

1. *Antestia lineaticollis* Stal var. The variegated bug.

This is the most serious insect pest of coffee. It would appear that the outbreaks were becoming more frequent. The annual loss to planters has been estimated to exceed £15,000.

The factors which favour the increase in numbers of this pest are very obscure; no weather condition or other factor seems constantly to be associated with serious attacks by bug. Careful and continued collection of all stages, and breeding of parasites from collected eggs, prove successful in controlling the insect in some instances, while in others, these measures are attended by partial success only. This seems to indicate migration of bug, in the latter cases, from surrounding breeding places but I have not yet succeeded in finding this pest feeding on any plant other than coffee. Various reports of the discovery of *Antestia lineaticollis* on other food plants have been received from time to time but in no instance was the report supported by insect specimens.

I hope to be able to pay more attention to this problem during the coming year, although the projected absence of the Mycologist will necessitate my presence at headquarters during the greater part of the time.

2. *Stephanoderes hampei* Ferr.—Berry-borer.

No reports of serious attack by this pest have been received but I have observed the insects' presence in abnormal numbers on several estates.

During the coming year I intend to test the efficiency of breeding of the parasites from "buni" coffee as a means of control of this borer.

3. *Pseudococcus citri* Risso—Root mealy-bug.

This insect continues to be a serious pest on some estates. Treatment with tobacco-soap solution seems to be only temporarily effective and the application has to be repeated every three months or so. It is probable that the ant *Acropyga gowdeyi* Wheeler which attends the mealy-bug is partly responsible for the re-infection of coffee roots.

The projected test, mentioned in my report for 1921, of the effect of applying lime to the soil around the infected roots was not carried out because lime was not available.

Several soil insecticides, which if efficient should be more lasting in effect than tobacco-soap solution, are to be tested during the coming year.

4. *Metadrepna glauca* Hmp.—Leaf-eating caterpillar.

Several severe outbreaks occurred during June and July. Control was effected either by hand-picking of caterpillars or by spraying the trees with poison.

5. *Diarthrothrips coffeae* Will—Thrips.

On estates in districts subject to moderately long periods of drought, severe attacks were experienced. Spraying is the only means of control, but this in most cases proves very expensive.

6. *Bixadus sierricola* White.—Stem-borer.

Reports of attack were received from two widely separated plantations in Entebbe and Masindi districts. In both cases the attacked coffee trees were adjacent to forest land.

The injuries closely resemble those due to *Anthores lenconotus* Pasc. The larva after feeding for a time in the bark of the lower part of the stem, bores into the wood, making large burrows; often the stem is ringed and the plant soon dies.

Early detection of attack is essential to safeguard the trees. In advanced cases "stumping" may be necessary, but where the burrows are not extensive and have not appreciably affected the mechanical strength of the stem, injection of carbon tetrachloride, carbon bisulphide or petrol and subsequent plugging of the holes with clay should control the pest. Cut stems or dead trees should be burnt as soon as possible.

7. *Isconiris* sp.—Leaf-eating weevil.

This insect new to the collection here and hitherto unrecorded as a pest on coffee in Uganda has thus far been noticed on one estate only. The beetle eats the young buds and leaves. Hand-picking or spraying with poison (lead arsenate or Paris green) are recommended for control.

8. *Pseudococcus virgatus* Ckll.—Mealy-bug.

One infestation of coffee trees requiring treatment was reported.

9. *Asterolecanium coffeae* Newst.—Scale.

This was responsible for the death of several coffee trees which were previously noted to be in a weak condition.

10. *Achaea catocaloides* Gn. (Noctuidae)—Leaf-eating caterpillar.

An unusual outbreak of this caterpillar occurred. It is said to appear periodically in enormous numbers but this is the first time the insect has been identified. Evidently the caterpillar is a general feeder living normally in the forest from which in this instance it spread through bush land on to coffee, maize and beans, threatening enormous damage to the first-named crop.

Control was effected by dusting the infected coffee trees with Paris green and burning the bush vegetation between the forest and the coffee.



### On Cotton.

#### 1. *Earias insulana* Boisd.—Boll-worm.

During the early part of the year the pest was uncommon but several serious infestations of the succeeding crop were reported during December in Bukedi and Kyagwe Districts. One caterpillar was found parasitised but I failed to rear adult parasites. In one instance the insect was noticed boring into young shoots. When flower buds or young bolls are attacked they are generally shed very early; shedding of bolls may also be due to drought or other causes.

This species has been bred:—from the fruits of “bikyenke” (Lunyoro)—probably *Hibiscus sabdariffa*—which is grown on a small scale by natives of Bunyoro who use the seed for making a kind of flour; and from the caterpillars feeding on flowers of the deep red *Hibiscus* much used as a hedge plant in Uganda.

#### 2. *Aphis gossypii* Glover—Green-fly.

The growth of young or weak plants, or of older plants during periods of drought, is much retarded by this pest. The insect was observed to be preyed on by the adults and larvae of the Coccinellid (lady-bird) beetles *Chilomenes vicina* Muls. and *C. lunata* Fab.

#### 3. *Oxycaraenus* spp.—Stainers.

These were not common on cotton. *O. rufiventris* Germ., *O. fieberi* Stal. and *Oxycaraenus* sp. not in the British Museum were found on cotton; the last mentioned species was also found on “lubera” (*Hibiscus cannabium*) as also was *O. hyalipennis* Costa which has previously been recorded on cotton.

#### 4. *Dysdercus* spp.—Stainers.

Insects of this genus were less common than *Oxycaraenus* spp. *D. nigrofasciatus* Stal. was found on the fruits of “kifula” (*Abutilon indicum*).

5. The Meloid beetles *Coryna apicornis* Guer. and? *Coryna* sp. (not named in this collection) are common cotton flower-eaters but the damage they do is negligible.

6. An Aleurodid (white fly) which has not yet been identified was found in small numbers on cotton leaves in the Eastern Province.

### On Tea.

A number of trees were discovered with their roots infested by a Coccid new to the collection here.

### On Sweet Potato.

*Acraea acerata* Hew.—the leaf eating caterpillar—was as usual responsible for a certain amount of damage.

### On Maize.

The caterpillar of *Busseola fusca* Hmp. is recorded for the first time as a stem-borer in maize in Uganda.

### On Shade Trees.

The rain tree (*Pithecolobium saman*) was attacked by an unidentified stem-boring caterpillar and a Buprestid beetle.

### Mulberry Silk.

A sample of dried cocoons weighing about nine pounds was sent in April to the Imperial Institute, London, for examination and report. At the time of writing no report has yet come to hand.

During my absence from the country my native assistant continued to rear silkworms. On my return I reared all the caterpillars to the pupal stages and after selecting a few of the best white and yellow cocoons for breeding purposes I killed the remainder. The eggs obtained from the selected insects have not yet hatched though it is six weeks since they were laid.

As soon as time permits I propose to have a small box fitted up for hibernating the eggs in order to bring about regular hatching. The recent installation of an ice plant in Kampala renders this process possible.

**Native Famine Food Stores.**

While on tour in the Eastern Province during January, I inspected numerous food stores for the presence of insect pests but in no case was the food found infested.

**Insects and other Specimens received.**

I am indebted to the following for specimens they have sent in:—Dr. G. D. H. Carpenter—about 600 miscellaneous insects; the late Mr. R. A. Dummer—Lepidoptera in papers; Mr. G. T. Philpott—3 species of Coccidae; Mr. D. N. Stafford—intestinal parasites from a native; Mr. W. C. Simmons—one tick; Mr. H. T. Wells—one Lasiocampid caterpillar; and Dr. W. D. Hunter of the United States Bureau of Entomology—a collection of cotton pests.

**The Reference Collection.**

A large number of the insects already in the collection have been named during the year; there must still be at least half of the specimens unnamed. Numerous additions have been made to the reference collection.

The Imperial Bureau of Entomology has rendered valuable services in this work. I am greatly indebted to the following Entomologists for identification of insect species:—Dr. G. A. K. Marshall; Dr. B. Uvarov; Mr. G. E. Bryant; Mr. E. Meyrick; Mr. W. H. T. Tams; Dr. G. Arnold (Rhodesia); and Mr. H. Desbordes.

**Plant Imports.**

One hundred and forty-five consignments were examined from countries as shown below:—

|                          |     |     |     |     |     |
|--------------------------|-----|-----|-----|-----|-----|
| United Kingdom ...       | ... | ... | ... | ... | 78  |
| France ...               | ... | ... | ... | ... | 15  |
| India ...                | ... | ... | ..  | ... | 14  |
| Kenya ...                | ..  | ... | ... | ... | 8   |
| Holland ...              | ... | ... | ... | ... | 7   |
| South Africa ..          | ... | ..  | ... | ..  | 7   |
| United States of America | ... | ... | ... | ... | 4   |
| Belgium ..               | ... | ... | ... | ... | 4   |
| Egypt ...                | ... | ... | ... | ... | 4   |
| Japan ...                | ... | ... | ... | ... | 2   |
| Nyasaland ...            | ... | ... | ... | ... | 1   |
| Zanzibar ...             | ... | ... | ... | ... | 1   |
| TOTAL ...                |     |     |     |     | 145 |

**Kampala Museum.**

A few more local products have been placed on exhibition.

The old roof was replaced during December by one of the ordinary type. While repairs were in progress the exhibits and cases were stored in a house kindly loaned without charge by Mr. G. C. Ishmael. A few panes of glass in the cases were broken during removal and many labels detached from exhibits.

**H. HARGREAVES,**  
*Government Entomologist.*



## APPENDICES.

## Appendix No. 1.

IMPERIAL INSTITUTE OF THE UNITED KINGDOM,  
THE COLONIES AND INDIA.**Report on Banana Flour from Uganda.**

The samples of banana flour which are the subject of this report were forwarded to the Imperial Institute by the Acting Director of Agriculture, and are referred to in his letter No. 911/511 dated the 21st September, 1922.

It was stated that the flours had been prepared from native varieties of bananas, and a report on them was desired in connection with the work of the Department of Agriculture on native food crops.

**Description.**

"No. 1, *Nakitembe*."—Weight 12½ ozs. Dark cream coloured flour with a mild, slightly sweet taste, and containing many small lumps.

"No. 2, *Nakabululu*."—Weight 15½ ozs. Brownish-cream coloured flour, not so lumpy as No. 1, and stronger in taste.

"No. 3, *Lweunzika*."—Weight 10 ozs. Slightly darker flour than No. 1, but not so lumpy; similar in taste to No. 2.

"No. 5, *Ndizabaulu*."—Weight 14 ozs. Very slightly darker than flour No. 3, with a taste similar to that of No. 2.

"No. 7, *Kibuzi*."—Weight 12½ ozs. Very slightly darker than flour No. 5, of coarser texture and stronger taste.

"No. 8, *Mbwazirume*."—Weight 14 ozs. Of lighter colour than flour No. 1, with a taste which was similar but not so good.

"No. 9, *Muvubo*."—Weight 11½ ozs. Fairly dark cream coloured flour (the lightest in colour of the series) with a rather strong taste.

"No. 11, *Namwezi*."—Weight 6 ozs. Very slightly darker than flour No. 9, with a taste similar to that of No. 1.

"No. 14, *Nakakongo*."—Weight 8½ ozs. Similar in colour to flour No. 9, and in taste to No. 1.

"No. 19, *Musenzalanda*."—Weight 15 ozs. Brownish-cream coloured flour, the darkest of the series, with a taste, not quite so strong as that of No. 9.

"No. 25, *Kigere Kyanjovu*."—Weight 15½ ozs. Similar in colour to flour No. 9, and in taste to No. 1.

"No. 27, *Ndyabalangira*."—Weight 1 lb. Similar in colour to flour No. 14, with a mild taste, sweeter than that of No. 1.

"No. 30, *Mamba*."—Weight 12 ozs. Very similar in colour to flour No. 9, with a mild taste and good flavour.

"No. 31, *Luwata*."—Weight 14½ ozs. Similar in colour to flour No. 27, with a taste not so strong as that of No. 9.

"No. 33, *Ntika*."—Weight 1 lb. 1½ ozs. Similar in colour to flour No. 9, with a mild taste and good flavour.

"*Red Gonja, grown at Entebbe*"—Weight 7½ ozs. Similar in colour to flour No. 30, with a strong, rather unpleasant taste.

"*Yellow Banana, grown at Entebbe*."—Weight 9½ ozs. Greyish-cream coloured flour containing numerous small dark-coloured particles. The taste was rather strong.

## Results of Examination.

Samples Nos. 9 and 19, the lightest and darkest of the series, and the two flours described as "Red Gonja" and "Yellow Banana," were analysed at the Imperial Institute with the following results:—

|                                          | No. 9.<br>per cent. | No. 19.<br>per cent. | "RED GONJA"<br>per cent. | "YELLOW<br>BANANA"<br>per cent. |
|------------------------------------------|---------------------|----------------------|--------------------------|---------------------------------|
| Moisture ... ..                          | 13.3                | 13.3                 | 14.1                     | 14.2                            |
| Crude Proteins ... ..                    | 4.8                 | 5.1                  | 3.1                      | 3.5                             |
| Fat ... ..                               | 0.6                 | 0.5                  | 0.8                      | 0.6                             |
| Starch (by acid hydrolysis) ...          | 64.8                | 63.6                 | 67.8                     | 62.8                            |
| *Other Carbohydrates (by difference) ... | 12.6                | 13.2                 | 11.5                     | 15.7                            |
| Crude Fibre ... ..                       | 0.9                 | 1.0                  | 1.0                      | 1.1                             |
| Ash ... ..                               | 3.0                 | 3.3                  | 1.7                      | 2.1                             |
| Nutrient Ratio ... ..                    | 1:16.4              | 1:15.3               | 1:26.2                   | 1:22.8                          |
| Food Units ... ..                        | 91.0                | 91.0                 | 89.0                     | 89.0                            |

\*Including sugars, as follows:—

|                                                            |      |      |      |      |
|------------------------------------------------------------|------|------|------|------|
| Reducing sugars, expressed as dextrose, per cent ... ..    | 2.0  | 1.53 | 1.16 | 2.28 |
| Non-reducing sugars, expressed as sucrose, per cent ... .. | 0.27 | 0.47 | nil  | nil  |

These results show that Samples Nos. 9 and 19 contained more protein than the "Red Gonja" and "Yellow Banana" flours, but were otherwise similar to them.

As the relative value of the flours depends chiefly on the proportion of protein present, the amount of this constituent was determined in the remaining 13 samples. The percentages of moisture and crude proteins in all the flours are given in the following table:—

| SAMPLE. | MOISTURE.<br>per cent. | CRUDE PROTEINS.<br>per cent. | SAMPLE.       | MOISTURE.<br>per cent. | CRUDE PROTEINS.<br>per cent. |
|---------|------------------------|------------------------------|---------------|------------------------|------------------------------|
| 1       | 10.6                   | 5.8                          | 19            | 13.3                   | 5.1                          |
| 2       | 10.9                   | 6.2                          | 25            | 11.1                   | 4.8                          |
| 3       | 10.4                   | 5.9                          | 27            | 11.0                   | 4.6                          |
| 5       | 10.4                   | 6.1                          | 30            | 12.1                   | 5.4                          |
| 7       | 10.9                   | 5.9                          | 31            | 11.4                   | 5.6                          |
| 8       | 10.7                   | 6.5                          | 33            | 11.4                   | 5.1                          |
| 9       | 13.3                   | 4.8                          | Red Gonja     | 14.1                   | 3.1                          |
| 11      | 11.8                   | 4.8                          | Yellow Banana | 14.2                   | 3.5                          |
| 14      | 11.7                   | 6.1                          |               |                        |                              |

## Remarks.

Banana flour is essentially a carbohydrate food stuff and contains only a small percentage of protein. It should therefore be employed in conjunction with other foods richer in protein (*e.g.*, beans and peas) in order to ensure a sufficiency of protein in the diet.

The more protein a banana flour contains, the greater is its value as a food. From this point of view Nos. 2, 5, 8 and 14 of the present series are the best, whilst the "Red Gonja" and "Yellow Banana" varieties, which contain considerably less protein than the other flours, are the least desirable.

The slight differences in colour and taste shown by the various samples are probably not sufficiently important to be worth special consideration as affecting the comparative value of the flours as foodstuffs for native use.

16TH FEBRUARY, 1923.



## Native Agriculture—Estimates of Approximate Acreages of Crops under Cultivation.

| Province and District. | ACRES.    |          |         |         |         |        |         |         |            |        |       |         |
|------------------------|-----------|----------|---------|---------|---------|--------|---------|---------|------------|--------|-------|---------|
|                        | Potatoes. |          | Millet. |         | Rubber. |        | Cotton. | Coffee. | Plantains. | Maize. | Oil.  | Beans.  |
|                        | Sweet.    | English. | Matama. | Wimbi.  | Para.   | Other. |         |         |            |        |       |         |
| BUANDA :—              | 120,000   | 250      | 500     | 1,000   | 750     | ..     | 50,000  | 4,000   | 370,000    | 4,000  | ..    | 10,000  |
|                        | 6,500     | 300      | 600     | 150     | 100     | ..     | 10,000  | 2,000   | 150,000    | 3,300  | 30    | 3,000   |
|                        | 2,518     | 1        | ..      | 222     | 5       | ..     | 9,219   | 2,610   | 65,000     | 1,505  | ..    | ..      |
|                        | 25,000    | 40       | 1,000   | 10,000  | ..      | ..     | 6,000   | 700     | 30,000     | 3,000  | 100   | 3,500   |
|                        | ..        | ..       | ..      | ..      | ..      | ..     | ..      | ..      | ..         | ..     | ..    | ..      |
| TOTAL                  | 154,018   | 591      | 2,100   | 11,372  | 855     | ..     | 75,219  | 9,310   | 615,000    | 11,805 | 130   | 17,900  |
| EASTERN :—             | ..        | ..       | ..      | ..      | ..      | ..     | ..      | ..      | ..         | ..     | ..    | ..      |
|                        | ..        | ..       | ..      | ..      | ..      | ..     | ..      | ..      | ..         | ..     | ..    | ..      |
|                        | ..        | ..       | ..      | ..      | ..      | ..     | ..      | ..      | ..         | ..     | ..    | ..      |
|                        | ..        | ..       | ..      | ..      | ..      | ..     | ..      | ..      | ..         | ..     | ..    | ..      |
|                        | ..        | ..       | ..      | ..      | ..      | ..     | ..      | ..      | ..         | ..     | ..    | ..      |
| TOTAL                  | ..        | ..       | ..      | ..      | ..      | ..     | ..      | ..      | ..         | ..     | ..    | ..      |
| NORTHERN :—            | 12,000    | 30       | 500     | 6,200   | ..      | ..     | 1,500   | 5,300   | 2,000      | 2,000  | ..    | 5,900   |
|                        | 826       | ..       | 5,167   | ..      | ..      | ..     | 4,000   | ..      | 50         | ..     | ..    | 2,880   |
|                        | 4,320     | ..       | 13,250  | 13,840  | ..      | ..     | 672     | ..      | 6          | 2      | ..    | 1,623   |
|                        | 85,000    | ..       | 32,000  | 42,000  | ..      | ..     | 1,000   | ..      | 30         | 700    | ..    | 4,500   |
|                        | ..        | ..       | ..      | ..      | ..      | ..     | ..      | ..      | ..         | ..     | ..    | ..      |
| TOTAL                  | 102,146   | 30       | 50,917  | 62,040  | ..      | ..     | 7,172   | 151     | 5,386      | 2,702  | ..    | 14,453  |
| WESTERN :—             | 20,000    | ..       | 1,000   | 40,000  | 150     | ..     | 20      | 1,000   | 50,000     | 1,000  | ..    | 20,000  |
|                        | 25,000    | ..       | 4,000   | 18,000  | ..      | ..     | ..      | 150     | 20,112     | 4,000  | ..    | 2,880   |
|                        | 10,000    | ..       | 25,000  | 30,500  | ..      | ..     | ..      | 9       | 11,000     | 5,100  | ..    | 1,623   |
|                        | ..        | ..       | ..      | ..      | ..      | ..     | ..      | ..      | ..         | ..     | ..    | 4,500   |
|                        | ..        | ..       | ..      | ..      | ..      | ..     | ..      | ..      | ..         | ..     | ..    | ..      |
| TOTAL                  | 55,000    | 21       | 30,000  | 88,500  | 150     | ..     | 20      | 1,158   | 81,112     | 10,100 | 2     | 75,000  |
| RUDOLF :—              | ..        | ..       | ..      | ..      | ..      | ..     | ..      | ..      | ..         | ..     | ..    | ..      |
|                        | ..        | ..       | ..      | ..      | ..      | ..     | ..      | ..      | ..         | ..     | ..    | ..      |
|                        | ..        | ..       | ..      | ..      | ..      | ..     | ..      | ..      | ..         | ..     | ..    | ..      |
|                        | ..        | ..       | ..      | ..      | ..      | ..     | ..      | ..      | ..         | ..     | ..    | ..      |
|                        | ..        | ..       | ..      | ..      | ..      | ..     | ..      | ..      | ..         | ..     | ..    | ..      |
| TOTAL                  | ..        | ..       | ..      | ..      | ..      | ..     | ..      | ..      | ..         | ..     | ..    | ..      |
| GRAND TOTAL            | 334,164   | 642      | 148,017 | 352,912 | 1,005   | 30     | 333,020 | 10,699  | 702,998    | 25,607 | 3,132 | 127,853 |
|                        | ..        | ..       | ..      | ..      | ..      | ..     | ..      | ..      | ..         | ..     | ..    | ..      |
|                        | ..        | ..       | ..      | ..      | ..      | ..     | ..      | ..      | ..         | ..     | ..    | ..      |
|                        | ..        | ..       | ..      | ..      | ..      | ..     | ..      | ..      | ..         | ..     | ..    | ..      |
|                        | ..        | ..       | ..      | ..      | ..      | ..     | ..      | ..      | ..         | ..     | ..    | ..      |

\* Not known.

## Native Agriculture—Live Stock.

| Province and District.                              |  |  |  | Cattle.                   | Sheep.  | Goats.  | Horses. | Mules. | Donkeys. |
|-----------------------------------------------------|--|--|--|---------------------------|---------|---------|---------|--------|----------|
| BUGANDA :— Mengo ... ..                             |  |  |  | 33,000                    | *       | 120,000 | —       | 1      | 12       |
| Entebbe ... ..                                      |  |  |  | 17,138                    | 5,000   | 41,000  | —       | —      | 2        |
| Masaka ... ..                                       |  |  |  | 53,115                    | 7,096   | 18,011  | —       | —      | —        |
| Mubende ... ..                                      |  |  |  | 18,752                    | 5,000   | 37,000  | —       | 2      | 2        |
| TOTAL ... ..                                        |  |  |  | 122,005                   | 17,096  | 216,011 | —       | 3      | 16       |
| EASTERN :— Busoga ... ..                            |  |  |  | 52,450                    | *       | *       | —       | —      | —        |
| Bukedi ... ..                                       |  |  |  | 190,805                   | 17,981  | 57,369  | —       | 2      | 34       |
| Teso ... ..                                         |  |  |  | 177,704                   | 24,406  | 94,400  | —       | —      | —        |
| Lango ... ..                                        |  |  |  | 91,000                    | 35,000  | 65,000  | —       | —      | —        |
| Karamoja }<br>Lobor }                               |  |  |  | No basis for an estimate. |         |         |         |        |          |
| TOTAL ... ..                                        |  |  |  | 511,959                   | 77,387  | 216,769 | —       | 2      | 34       |
| NORTHERN :— Masindi }<br>Hoima }                    |  |  |  | 3,184                     | 4,860   | 20,873  |         | —      | —        |
| Gulu .. ..                                          |  |  |  | 24,580                    | 9,407   | 25,554  | —       | 2      | 25       |
| Chua ... ..                                         |  |  |  | 25,000                    | —       | —       | —       | 2      | 4        |
| West Nile ... ..                                    |  |  |  | 50,000                    | 23,000  | 58,000  | 1       | —      | 4        |
| TOTAL ... ..                                        |  |  |  | 102,764                   | 37,267  | 104,427 | 1       | 4      | 33       |
| WESTERN :— Toro ... ..                              |  |  |  | 25,000                    | 15,000  | 40,000  | —       | 1      | 8        |
| Ankole ... ..                                       |  |  |  | 100,000                   | 60,000  | 120,000 | —       | 2      | 2        |
| Kigezi ... ..                                       |  |  |  | 56,980                    | 60,000  | 140,000 | —       | —      | —        |
| TOTAL ... ..                                        |  |  |  | 181,980                   | 135,000 | 300,000 | —       | 3      | 10       |
| RUDOLF :— Turkwel ...<br>Turkana ...<br>Dabossa ... |  |  |  | No basis for an estimate. |         |         |         |        |          |
| GRAND TOTAL ... ..                                  |  |  |  | 918,708                   | 266,750 | 837,207 | 1       | 12     | 93       |

\* Not known.



# European Agriculture.

## COMPILED FROM RETURNS OF 146 PLANTATIONS.

| Province and District. | No. of Estates. | Total Acreage taken up. | Total Acreage under cultivation. | Total Acreage not cultivated. | Acreage of Coffee ( <i>Arabica</i> ). |               | Acreage of Coffee ( <i>Robusta</i> ). |               | Acreage of Para Rubber. |               | Acreage of Other Rubbers. |               | Acreage of Cacao. |      | Cotton. | Maize. | Sugar. | Tea. | Miscellaneous Crops. |
|------------------------|-----------------|-------------------------|----------------------------------|-------------------------------|---------------------------------------|---------------|---------------------------------------|---------------|-------------------------|---------------|---------------------------|---------------|-------------------|------|---------|--------|--------|------|----------------------|
|                        |                 |                         |                                  |                               | Under 2 years.                        | Over 2 years. | Under 2 years.                        | Over 2 years. | Under 5 years.          | Over 5 years. | Under 5 years.            | Over 5 years. |                   |      |         |        |        |      |                      |
|                        |                 |                         |                                  |                               |                                       |               |                                       |               |                         |               |                           |               |                   |      |         |        |        |      |                      |
| BUGANDA:—              |                 |                         |                                  |                               |                                       |               |                                       |               |                         |               |                           |               |                   |      |         |        |        |      |                      |
| Mengo                  | 62              | 25,079                  | 11,725                           | 13,354                        | 316                                   | 6,170         | 38                                    | 134           | 1,570                   | 7,005         | —                         | 357           | —                 | 697  | 425     | 178    | 36     | —    | 102                  |
| Entebbe                | 18              | 9,116                   | 3,041                            | 6,075                         | 115                                   | 2,173         | 2                                     | 8             | 832                     | 1,293         | —                         | —             | —                 | 35   | 23      | 25     | 30     | —    | —                    |
| Masaka                 | 11              | 4,804                   | 1,145                            | 3,659                         | 183                                   | 867           | —                                     | 1             | 87                      | 316           | —                         | —             | —                 | 94   | —       | —      | —      | —    | —                    |
| Mubende                | 9               | 5,777                   | 1,677                            | 4,100                         | 28                                    | 1,517         | 5                                     | —             | 210                     | 250           | —                         | —             | —                 | 12   | 25      | —      | 20     | 70   | —                    |
| TOTAL                  | 100             | 44,776                  | 17,588                           | 27,188                        | 642                                   | 10,727        | 45                                    | 143           | 2,699                   | 8,864         | —                         | 357           | —                 | 838  | 473     | 203    | 86     | 70   | 102                  |
| EASTERN:—              |                 |                         |                                  |                               |                                       |               |                                       |               |                         |               |                           |               |                   |      |         |        |        |      |                      |
| Busoga                 | 9               | 10,131                  | 1,640                            | 8,491                         | 70                                    | 1,325         | 3                                     | 2             | 60                      | 10            | —                         | —             | —                 | 30   | 27      | 20     | 87     | —    | 355                  |
| NORTHERN:—             |                 |                         |                                  |                               |                                       |               |                                       |               |                         |               |                           |               |                   |      |         |        |        |      |                      |
| Bunyoro                | 22              | 14,475                  | 3,691                            | 10,784                        | 457                                   | 2,909         | 6                                     | 44            | 620                     | 715           | —                         | —             | —                 | —    | 80      | 275    | —      | —    | —                    |
| WESTERN:—              |                 |                         |                                  |                               |                                       |               |                                       |               |                         |               |                           |               |                   |      |         |        |        |      |                      |
| Toro                   | 15              | 8,137                   | 1,309                            | 6,828                         | 182                                   | 1,051         | 40                                    | 10            | —                       | —             | —                         | —             | —                 | —    | —       | —      | —      | —    | 26                   |
| GRAND TOTAL            | 146             | 77,519                  | 24,228                           | 53,291                        | 1,351                                 | 16,012        | 94                                    | 199           | 3,379*                  | 9589†         | —                         | 357           | 5                 | 868‡ | 580§    | 498**  | 173    | 70   | 483††                |

NOTE :—Small acreages are also cultivated under the control of the various Missions.

45 Estates have been abandoned, and the above figures have been compiled from returns actually received.

|                                         |                                       |
|-----------------------------------------|---------------------------------------|
| * 2,469 acres interplanted with coffee. | ** 73 acres interplanted with coffee. |
| † 5,785 "                               | †† 105 " "                            |
| ‡ 344 "                                 | ‡‡ 87 " "                             |
| § 283 "                                 | §§ 284 " "                            |
|                                         | rubber.                               |
|                                         | " "                                   |
|                                         | " coffee.                             |

# Indian Agriculture.

Appendix No. 5.

COMPILED FROM RETURNS OF 27 PLANTATIONS.

| Province and District. |                    |                         |                                  |                               |                                       |               |                                       |               |                         |               |                           |               |                   |               |         |        |        |                      |
|------------------------|--------------------|-------------------------|----------------------------------|-------------------------------|---------------------------------------|---------------|---------------------------------------|---------------|-------------------------|---------------|---------------------------|---------------|-------------------|---------------|---------|--------|--------|----------------------|
|                        | Number of Estates. | Total Acreage taken up. | Total Acreage under cultivation. | Total Acreage not cultivated. | Acreage of Coffee ( <i>Arabica</i> ). |               | Acreage of Coffee ( <i>Robusta</i> ). |               | Acreage of Para Rubber. |               | Acreage of Other Rubbers. |               | Acreage of Cacao. |               | Cotton. | Maize. | Sugar. | Miscellaneous Crops. |
|                        |                    |                         |                                  |                               | Under 2 years.                        | Over 2 years. | Under 2 years.                        | Over 2 years. | Under 5 years.          | Over 5 years. | Under 5 years.            | Over 5 years. | Under 5 years.    | Over 5 years. |         |        |        |                      |
|                        |                    |                         |                                  |                               |                                       |               |                                       |               |                         |               |                           |               |                   |               |         |        |        |                      |
| BUGANDA :—             |                    |                         |                                  |                               |                                       |               |                                       |               |                         |               |                           |               |                   |               |         |        |        |                      |
| Mengo                  | 10                 | 6,023                   | 3,871                            | 2,152                         | 190                                   | 1,010         | ...                                   | 105           | 180                     | 695           | ...                       | ...           | ...               | ...           | 35      | ...    | 2,281  | ...                  |
| Entebbe                | 3                  | 974                     | 670                              | 304                           | 70                                    | 102           | 10                                    | 5             | 180                     | 185           | ...                       | ...           | ...               | ...           | 38      | ...    | 140    | ...                  |
| Masaka                 | 1                  | 1,272                   | 339                              | 933                           | ...                                   | 170           | ...                                   | 30            | 50                      | 120           | ...                       | ...           | ...               | 10            | 100     | ...    | ...    | 29                   |
| Mubende                | 6                  | 2,702                   | 1,365                            | 1,337                         | 290                                   | 636           | ...                                   | 5             | 20                      | 20            | ...                       | ...           | ...               | ...           | ...     | ...    | 429    | 5                    |
| TOTAL                  | 20                 | 10,971                  | 6,245                            | 4,726                         | 550                                   | 1,918         | 10                                    | 145           | 430                     | 1,020         | ...                       | ...           | ...               | 10            | 173     | ...    | 2,850  | 34                   |
| EASTERN :—             |                    |                         |                                  |                               |                                       |               |                                       |               |                         |               |                           |               |                   |               |         |        |        |                      |
| Busoga                 | 5                  | 3,668                   | 304                              | 3,364                         | 15                                    | 145           | 7                                     | ...           | ...                     | ...           | ...                       | ...           | 5                 | ...           | ...     | 2      | 125    | 5                    |
| NORTHERN :—            |                    |                         |                                  |                               |                                       |               |                                       |               |                         |               |                           |               |                   |               |         |        |        |                      |
| Masindi                | 2                  | 850                     | 254                              | 596                           | ...                                   | 254           | ...                                   | ...           | ...                     | ...           | ...                       | ...           | ...               | ...           | ...     | ...    | ...    | ...                  |
| GRAND TOTAL            | 27                 | 15,489                  | 6,803                            | 8,686                         | 565                                   | 2,317         | 17                                    | 145           | 430*                    | 1,020†        | ...                       | ...           | 5                 | 10            | 173     | 2      | 2,975  | 39                   |

\* 310 acres interplanted with coffee.

† 585 acres interplanted with coffee.

# Live Stock on European Plantations.

## Live Stock on Indian Plantations.

| Province. |      | Oxen. | Mules. | Donkeys. | Sheep. | Goats. | Pigs.† |
|-----------|------|-------|--------|----------|--------|--------|--------|
| BUGANDA   | ...  | 780   | 4      | —        | 8      | 50     | 11     |
| EASTERN   | ...  | 54    | —      | 5        | 98     | 100    | 6      |
| NORTHERN  | ...  | 92    | 1      | 2        | 3      | —      | —      |
| WESTERN   | .... | 211   | —      | —        | —      | —      | 33     |
| TOTAL     |      | 1,137 | 5      | 7        | 109    | 150    | 50     |

| Province. |     | Oxen. | Mules. | Donkeys. | Sheep. | Goats. | Pigs. |
|-----------|-----|-------|--------|----------|--------|--------|-------|
| BUGANDA   | ... | 162   | —      | 3        | —      | —      | —     |
| EASTERN   | ... | 12    | —      | —        | —      | —      | —     |
| NORTHERN  | ... | 43    | —      | 1        | 161    | 206    | —     |
| TOTAL     |     | 217   | —      | 4        | 161    | 206    | —     |



### Comparative Statement of Exports from the Uganda Protectorate for the year ended 31st December, 1922.

| ARTICLES.                         | Unit. | From 1st Jan.<br>to 31st Dec., 1922. |           | From 1st Jan.<br>to 31st Dec., 1921. |           | INCREASE. |        | DECREASE. |         |
|-----------------------------------|-------|--------------------------------------|-----------|--------------------------------------|-----------|-----------|--------|-----------|---------|
|                                   |       | Quantity                             | £         | Quantity                             | £         | Quantity  | £      | Quantity  | £       |
| Cotton, Ginned ...                | cwts. | 172,464                              | 877,625   | 290,592                              | 1,281,357 | —         | —      | 118,128   | 403,732 |
| Coffee, Husked ...                | "     | 51,262                               | 99,227    | 44,682                               | 89,452    | 2,406     | 5,189  | —         | —       |
| " Parchment ...                   | "     | —                                    | —         | 4,174                                | 4,586     | —         | —      | —         | —       |
| Rubber, Plantation ...            | lbs.  | 124,867                              | 3,741     | 74,002                               | 4,441     | 50,865    | —      | —         | 700     |
| Cacao ...                         | cwts. | 565                                  | 2,370     | 329                                  | 1,475     | 236       | 895    | —         | —       |
| Chillies ...                      | "     | 11,935                               | 52,768    | 7,355                                | 30,213    | 4,580     | 22,555 | —         | —       |
| Ground Nuts ...                   | "     | 10,137                               | 9,236     | 44                                   | 85        | 10,093    | 9,201  | —         | —       |
| Cotton Seed ...                   | "     | 42,478                               | 9,532     | 97,311                               | 22,113    | —         | —      | 54,833    | 12,581  |
| Castor Seed ...                   | "     | 569                                  | 574       | 269                                  | 302       | 300       | 272    | —         | —       |
| Simsim Seed ...                   | "     | 55,927                               | 47,100    | 20,060                               | 18,907    | 35,867    | 28,193 | —         | —       |
| Simsim Oil ...                    | "     | 57                                   | 162       | 12                                   | 47        | 45        | 115    | —         | —       |
| Ghee (Clarified Butter) ...       | "     | 909                                  | 4,329     | 481                                  | 2,075     | 428       | 2,254  | —         | —       |
| Jaggree (Unrefined Sugar) ...     | "     | 2,398                                | 3,742     | 2,593                                | 4,341     | —         | —      | 195       | 599     |
| Hides and Calf Skins ...          | "     | 5,397                                | 11,197    | 1,985                                | 6,211     | 3,412     | 4,986  | —         | —       |
| Skins, Sheep and Goat ...         | "     | 2,832                                | 18,680    | 3,000                                | 20,041    | —         | —      | 168       | 1,361   |
| " Miscellaneous ...               | value | —                                    | 43        | —                                    | 34        | —         | 9      | —         | —       |
| Hippo Teeth ...                   | lbs.  | 15,344                               | 1,534     | 2,114                                | 211       | 13,230    | 1,323  | —         | —       |
| Horns ...                         | "     | 1,011                                | 626       | 6,562                                | 4,524     | —         | —      | 5,551     | 3,898   |
| Ivory ...                         | "     | 136,837                              | 68,419    | 93,198                               | 46,599    | 43,639    | 21,820 | —         | —       |
| Miscellaneous Produce ...         | value | —                                    | 4,470     | —                                    | 1,691     | —         | 2,779  | —         | —       |
| Timber ...                        | "     | —                                    | 35        | —                                    | 343       | —         | —      | —         | 308     |
| Goods, Manufactured, unenumerated | "     | —                                    | 813       | —                                    | 483       | —         | —      | —         | 170     |
| Goods, Unmanufactured, "          | "     | —                                    | 70        | —                                    | 57        | —         | 13     | —         | —       |
| <b>TOTALS</b> ...                 | —     | —                                    | 1,215,793 | —                                    | 1,539,538 | —         | 99,604 | —         | 423,349 |

Net Decrease £323,745.

### Appendix No. 8.

### Comparative Statement of Exports from the Uganda Protectorate.

| ARTICLES.                           | Unit. | Year ended 31st<br>March, 1919. |           | Year ended 31st<br>March, 1920. |           | Year ended 31st<br>Dec., 1920. |           | Year ended 31st<br>Dec., 1921. |           | Year ended 31st<br>December, 1922. |           |
|-------------------------------------|-------|---------------------------------|-----------|---------------------------------|-----------|--------------------------------|-----------|--------------------------------|-----------|------------------------------------|-----------|
|                                     |       | Quantity                        | £         | Quantity                        | £         | Quantity                       | £         | Quantity                       | £         | Quantity                           | £         |
| Cotton Ginned ...                   | cwts. | 98,188                          | 965,951   | 130,464                         | 1,209,663 | 186,381                        | 3,919,453 | 290,592                        | 1,281,357 | 172,464                            | 877,625   |
| Coffee, Husked ...                  | "     | 50,460                          | 102,658   | 54,694                          | 156,668   | 36,808                         | 129,901   | 44,682                         | 89,452    | 51,262                             | 99,227    |
| " Parchment ...                     | "     | 3,851                           | 3,351     | 4,266                           | 5,046     | 4,385                          | 8,009     | 4,174                          | 4,586     | —                                  | —         |
| " Buni ...                          | "     | —                               | —         | —                               | —         | 1,919                          | 3,361     | —                              | —         | —                                  | —         |
| Rubber, Wild ...                    | lbs.  | 14,262                          | 620       | 2,089                           | 90        | 3,745                          | 244       | —                              | —         | —                                  | —         |
| " Plantation ...                    | "     | 253,063                         | 12,893    | 388,523                         | 25,902    | 446,427                        | 32,521    | 74,002                         | 4,441     | 124,867                            | 3,741     |
| Cacao ...                           | cwts. | 209                             | 331       | 660                             | 1,231     | 1,235                          | 4,933     | 329                            | 1,475     | 565                                | 2,370     |
| Chillies ...                        | "     | 5,487                           | 6,847     | 5,153                           | 10,251    | 4,535                          | 14,176    | 7,355                          | 30,213    | 11,935                             | 52,768    |
| Ground Nuts ...                     | "     | 896                             | 562       | 1,135                           | 1,388     | 248                            | 359       | 44                             | 85        | 10,137                             | 9,236     |
| Cotton Seed ...                     | "     | 33,223                          | 6,149     | 105,457                         | 25,783    | 47,232                         | 10,873    | 97,311                         | 22,113    | 42,478                             | 9,532     |
| Castor Seed ...                     | "     | 737                             | 468       | 8,518                           | 1,443     | 7,763                          | 828       | 269                            | 302       | 569                                | 574       |
| Sim Sim Seed ...                    | "     | 939                             | 1,008     | 23,384                          | 30,697    | 42,992                         | 69,365    | 20,060                         | 18,907    | 55,927                             | 47,100    |
| " Oil ...                           | "     | 27                              | 99        | 102                             | 470       | 3                              | 19        | 12                             | 47        | 57                                 | 162       |
| Cotton Seed Oil ...                 | "     | 448                             | 837       | 335                             | 876       | 257                            | 1,150     | —                              | —         | —                                  | —         |
| Ghee (Clarified Butter) ...         | "     | 6,143                           | 26,122    | 3,196                           | 13,303    | 1,744                          | 9,539     | 481                            | 2,075     | 909                                | 4,329     |
| Jaggree (Unrefined Sugar) ...       | "     | 2                               | 3         | 432                             | 502       | 777                            | 1,226     | 2,593                          | 4,341     | 2,398                              | 3,742     |
| Hides and Calf Skins ...            | "     | 15,053                          | 64,125    | 52,171                          | 242,238   | 20,528                         | 118,184   | 1,985                          | 6,211     | 5,397                              | 11,197    |
| Skins, Sheep and Goat ...           | "     | 1,967                           | 8,177     | 4,295                           | 28,230    | 2,776                          | 34,130    | 3,000                          | 20,041    | 2,832                              | 18,680    |
| " Miscellaneous ...                 | value | —                               | 29        | —                               | 9         | —                              | 79        | —                              | 34        | —                                  | 43        |
| Hippo Teeth ...                     | lbs.  | 3,265                           | 261       | 12,891                          | 1,074     | 7,589                          | 876       | 2,114                          | 211       | 15,344                             | 1,534     |
| Horns ...                           | "     | 129                             | 9         | 327                             | 250       | 1,322                          | 1,411     | 6,562                          | 4,524     | 1,011                              | 626       |
| Ivory ...                           | "     | 94,795                          | 37,918    | 161,091                         | 65,952    | 123,657                        | 74,298    | 93,198                         | 46,599    | 136,837                            | 68,419    |
| Timber ...                          | cwts. | 3,040                           | 1,939     | 1,975                           | 1,311     | 1,074                          | 905       | 306                            | 343       | —                                  | 35        |
| Animals, Living ...                 | No.   | 417                             | 1,985     | 3                               | 3         | —                              | —         | —                              | —         | —                                  | —         |
| Miscellaneous Produce ...           | value | —                               | 2,835     | —                               | 3,395     | —                              | 3,615     | —                              | 1,691     | —                                  | 4,470     |
| Goods, Manufactured, Unenumerated   | "     | —                               | 2,220     | —                               | 694       | —                              | 671       | —                              | 483       | —                                  | 313       |
| Goods, Unmanufactured, Unenumerated | "     | —                               | 60        | —                               | 50        | —                              | 358       | —                              | 57        | —                                  | 70        |
| <b>TOTALS</b> ...                   | —     | —                               | 1,247,457 | —                               | 1,828,537 | —                              | 4,440,484 | —                              | 1,539,538 | —                                  | 1,215,793 |

NOTE:—Exports for the year ended 31st December, 1920, includes the Quarter ended 31st March, 1920.







# Comparative Statement of Exports -the Produce of the U

| ARTICLES.                             | Unit. | BUKAKATA.            |        |                      |        | ENTEBBE.             |       |                      |     |
|---------------------------------------|-------|----------------------|--------|----------------------|--------|----------------------|-------|----------------------|-----|
|                                       |       | Year ended 31-12-22. |        | Year ended 31-12-21. |        | Year ended 31-12-22. |       | Year ended 31-12-21. |     |
|                                       |       | Quantity.            | £      | Quantity.            | £      | Quantity.            | £     | Quantity.            | £   |
| Cotton, Ginned ...                    | cwts. | 6,019                | 32,800 | 5,069                | 22,706 | 12                   | 59    | 1,092                | 4,7 |
| Coffee, Raw ...                       | "     | 1,111*               | 1,982  | 88                   | 198    | 442                  | 682   | 80                   | 1   |
| " Parchment ...                       | "     |                      |        | 261                  | 292    |                      |       | 117                  | 1   |
| Rubber, Plantation ...                | lbs.  | ...                  | ...    | ...                  | ...    | 15,857               | 558   | 24,150               | 1,4 |
| Cacao ...                             | cwts. | ...                  | ...    | ...                  | ...    | ...                  | 2     | ...                  | ... |
| Chillies ...                          | "     | 203                  | 874    | 64                   | 234    | 10                   | 52    | 82                   | 3   |
| Ground Nuts ...                       | "     | ...                  | ...    | ...                  | ...    | ...                  | ...   | ...                  | ... |
| Cotton Seed ...                       | "     | 1,748                | 391    | ...                  | ...    | ...                  | ...   | ...                  | ... |
| Castor Oil Seed ...                   | "     | ...                  | ...    | 2                    | 3      | ...                  | ...   | ...                  | ... |
| Simsim Seed ...                       | "     | ...                  | ...    | ...                  | ...    | ...                  | ...   | 218                  | 2   |
| " Oil ...                             | "     | ...                  | ...    | ...                  | ...    | ...                  | ...   | ...                  | ... |
| Ghee (Clarified Butter) ...           | "     | 32                   | 162    | 20                   | 85     | 2                    | 12    | 5                    | ... |
| Jaggree (Unrefined Sugar) ...         | "     | ...                  | ...    | 170                  | 285    | 52                   | 89    | 890                  | 1,4 |
| Hides and Calf Skins ...              | "     | 1,349                | 2,744  | 350                  | 1,179  | ...                  | ...   | ...                  | ... |
| Skins, Goat and Sheep ...             | "     | 9                    | 76     | 51                   | 349    | ...                  | ...   | ...                  | ... |
| " Miscellaneous ...                   | value | ...                  | ...    | ...                  | ...    | ...                  | ...   | ...                  | ... |
| Hippo Teeth ...                       | lbs.  | ...                  | ...    | ...                  | ...    | ...                  | ...   | ...                  | ... |
| Horns ...                             | "     | ...                  | ...    | ...                  | ...    | ...                  | ...   | ...                  | ... |
| Ivory ...                             | "     | ...                  | ...    | ...                  | ...    | 60                   | 30    | 230                  | 1   |
| Timber ...                            | value | ...                  | 1      | ...                  | 134    | ...                  | ...   | ...                  | 1   |
| Miscellaneous Produce ...             | "     | ...                  | 57†    | ...                  | 133    | ...                  | 96    | ...                  | 2   |
| Goods, Manufactured, unenumerated ... | "     | ...                  | 32     | ...                  | 197    | ...                  | 1     | ...                  | ... |
| Goods, Unmanufactured, " ...          | "     | ...                  | 6      | ...                  | ...    | ...                  | 2     | ...                  | ... |
| TOTALS ...                            | ...   | ...                  | 39,125 | ...                  | 25,795 | ...                  | 1,583 | ...                  | 9,0 |

| ARTICLES.                         | Unit. | LUZINGA.  |     | MBULAMUTI. |        | NAMASAGALI. |     | Qu  |
|-----------------------------------|-------|-----------|-----|------------|--------|-------------|-----|-----|
|                                   |       | Quantity. | £   | Quantity.  | £      | Quantity.   | £   |     |
| Cotton, Ginned ...                | cwts. | ...       | ... | 7,400      | 37,297 | ...         | 1   | 11  |
| Coffee, Raw ...                   | "     | ...       | ... | ...        | ...    | ...         | ... |     |
| Chillies ...                      | "     | 54        | 271 | 792        | 3,328  | ...         | ... | ... |
| Ground Nuts ...                   | "     | ...       | ... | ...        | ...    | ...         | ... | ... |
| Cotton Seed ...                   | "     | ...       | ... | 2,103      | 471    | ...         | ... | ... |
| Simsim ...                        | "     | ...       | ... | 103        | 87     | ...         | ... | ... |
| Simsim Oil ...                    | "     | ...       | ... | ...        | ...    | ...         | ... | ... |
| Ghee ...                          | "     | ...       | ... | 40         | 192    | 21          | 104 | ... |
| Jaggree ...                       | "     | ...       | ... | 221        | 371    | ...         | ... | ... |
| Hides and Calf Skins ...          | "     | ...       | ... | 73         | 154    | ...         | ... | ... |
| Skins, Goat and Sheep ...         | "     | ...       | ... | 54         | 337    | 3           | 7   | ... |
| Hippo Teeth ...                   | lbs.  | ...       | ... | ...        | ...    | ...         | ... | ... |
| Horns ...                         | "     | ...       | ... | ...        | ...    | ...         | ... | ... |
| Ivory ...                         | "     | ...       | ... | ...        | ...    | ...         | ... | 1   |
| Miscellaneous Produce ..          | value | ...       | ... | ...        | ...    | ...         | 1   | ... |
| Goods, Manufactured, unenumerated | "     | ...       | ... | ...        | ...    | ...         | ... | ... |
| TOTALS ...                        | ...   | ...       | 271 | ...        | 42,237 | ...         | 113 | ... |



## Entebbe Meteorological Statement for the Year 1922.

Lat. 0° 4' 31" N. Long. 32° 28' 30" E. Height of Barometer above M. S. L. 3842 Feet.

| MONTH.            | 7 A.M.                      |                      |           |           | 2 P.M.                                    |                      |           |           | 9 P.M.                                    |                      |           |           | Maximum Temperature. | Minimum Temperature. | Sunshine. | Rainfall. | No. of days Rain fell. |
|-------------------|-----------------------------|----------------------|-----------|-----------|-------------------------------------------|----------------------|-----------|-----------|-------------------------------------------|----------------------|-----------|-----------|----------------------|----------------------|-----------|-----------|------------------------|
|                   | Barometer reduced to 32° F. | Attached Thermometer | Dry Bulb. | Wet Bulb. | Barometer corrected and reduced to 32° F. | Attached Thermometer | Dry Bulb. | Wet Bulb. | Barometer corrected and reduced to 32° F. | Attached Thermometer | Dry Bulb. | Wet Bulb. |                      |                      |           |           |                        |
| 1922.             |                             |                      |           |           |                                           |                      |           |           |                                           |                      |           |           |                      |                      |           |           |                        |
| JANUARY           | 26-165                      | 71-6                 | 68-5      | 65-0      | 26-103                                    | 82-1                 | 77-8      | 70-7      | 26-148                                    | 68-5                 | 67-9      | 65-1      | 79-6                 | 63-0                 | 6-23      | 2-28      | 11                     |
| FEBRUARY          | 26-161                      | 71-2                 | 68-8      | 65-9      | 26-102                                    | 83-4                 | 78-0      | 70-4      | 26-155                                    | 69-0                 | 68-3      | 65-2      | 79-8                 | 63-2                 | 6-57      | 3-16      | 13                     |
| MARCH             | 26-180                      | 71-2                 | 68-2      | 66-1      | 26-129                                    | 80-7                 | 75-5      | 69-3      | 26-161                                    | 69-0                 | 68-2      | 65-7      | 77-1                 | 62-7                 | 4-20      | 8-05      | 17                     |
| APRIL             | 26-198                      | 74-7                 | 72-7      | 67-3      | 26-152                                    | 83-4                 | 77-2      | 70-5      | 26-205                                    | 69-1                 | 68-9      | 66-2      | 78-5                 | 64-3                 | 8-11      | 7-40      | 13                     |
| MAY               | 26-222                      | 73-2                 | 69-3      | 66-4      | 26-180                                    | 81-0                 | 74-7      | 68-8      | 26-219                                    | 68-5                 | 68-0      | 65-4      | 76-8                 | 63-2                 | 6-56      | 2-40      | 22                     |
| JUNE              | 26-212                      | 71-2                 | 68-3      | 65-7      | 26-187                                    | 80-4                 | 74-9      | 69-3      | 26-218                                    | 68-8                 | 68-5      | 65-7      | 76-8                 | 61-7                 | 6-16      | 3-27      | 10                     |
| JULY              | 26-257                      | 71-0                 | 67-5      | 64-2      | 26-228                                    | 79-3                 | 74-9      | 68-3      | 26-254                                    | 67-6                 | 66-8      | 64-6      | 76-7                 | 60-4                 | 5-50      | 2-95      | 9                      |
| AUGUST            | 26-209                      | 69-9                 | 66-3      | 64-1      | 26-166                                    | 76-6                 | 73-0      | 67-5      | 26-209                                    | 66-0                 | 65-3      | 63-2      | 75-8                 | 60-5                 | 4-17      | 3-10      | 16                     |
| SEPTEMBER         | 26-205                      | 69-9                 | 65-9      | 64-2      | 26-156                                    | 80-1                 | 75-2      | 68-7      | 26-181                                    | 66-9                 | 66-1      | 63-1      | 77-6                 | 60-9                 | 5-38      | 1-34      | 9                      |
| OCTOBER           | 26-179                      | 71-0                 | 66-7      | 64-3      | 26-121                                    | 81-9                 | 76-0      | 68-8      | 26-177                                    | 67-6                 | 67-0      | 64-7      | 78-7                 | 61-5                 | 5-25      | 3-30      | 14                     |
| NOVEMBER          | 26-179                      | 68-7                 | 67-1      | 64-7      | 26-149                                    | 82-4                 | 76-4      | 69-0      | 26-169                                    | 70-4                 | 71-6      | 67-1      | 79-4                 | 62-5                 | 6-08      | 5-32      | 8                      |
| DECEMBER          | 26-225                      | 74-5                 | 69-1      | 65-9      | 26-172                                    | 81-2                 | 76-5      | 70-8      | 26-186                                    | 70-0                 | 69-4      | 66-1      | 79-2                 | 62-0                 | 4-09      | 4-37      | 12                     |
| MEAN FOR THE YEAR | 26-199                      | 71-5                 | 68-2      | 65-4      | 26-154                                    | 81-0                 | 75-8      | 69-3      | 26-190                                    | 68-4                 | 68-0      | 65-2      | 78-0                 | 62-2                 | 5-52      | 56-94     | 154                    |

**Statement of Extra Meteorological Observations taken  
at Entebbe, for 1922.**

| MONTH.            |     |     |     | Solar Radiation Thermometer. |                           | Terrestrial<br>Radiation<br>Minimum<br>Thermometer. |
|-------------------|-----|-----|-----|------------------------------|---------------------------|-----------------------------------------------------|
|                   |     |     |     | Black<br>Bulb.               | Bright<br>Bulb.<br>2 P.M. |                                                     |
|                   |     |     |     | 0                            | 0                         | 0                                                   |
| JANUARY           | ... | ... | ... | 135.1                        | 99.7                      | 53.5                                                |
| FEBRUARY          | ... | ... | ... | 139.4                        | 101.1                     | 57.8                                                |
| MARCH             | ... | ... | ... | 136.8                        | 101.9                     | 56.2                                                |
| APRIL             | ... | ... | ... | 140.6                        | 102.1                     | 53.5                                                |
| MAY               | ... | ... | ... | 137.6                        | 98.8                      | 57.9                                                |
| JUNE              | ... | ... | ... | 137.4                        | 99.3                      | 55.9                                                |
| JULY              | ... | ... | ... | 137.2                        | 99.2                      | 53.5                                                |
| AUGUST            | ... | ... | ... | 131.8                        | 96.2                      | 55.1                                                |
| SEPTEMBER         | ... | ... | ... | 141.3                        | 100.8                     | 55.8                                                |
| OCTOBER           | ... | ... | ... | 142.3                        | 101.7                     | 56.6                                                |
| NOVEMBER          | ... | ... | ... | 143.5                        | 101.0                     | 57.1                                                |
| DECEMBER          | ... | ... | ... | 139.1                        | 100.1                     | 55.7                                                |
| MEAN FOR YEAR ... |     |     |     | 138.5                        | 100.2                     | 55.7                                                |

**Statement of Extra Meteorological Observations taken  
at Entebbe for 1922.**

| MONTH.            |     |     |     | Earth Thermometer 1½ feet deep. |        |        | Earth Thermometer 4 feet deep. |        |        |
|-------------------|-----|-----|-----|---------------------------------|--------|--------|--------------------------------|--------|--------|
|                   |     |     |     | 7 A.M.                          | 2 P.M. | 9 P.M. | 7 A.M.                         | 2 P.M. | 9 P.M. |
|                   |     |     |     | 0                               | 0      | 0      | 0                              | 0      | 0      |
| JANUARY           | ... | ... | ... | 76.5                            | 76.6   | 76.4   | 76.0                           | 76.1   | 76.0   |
| FEBRUARY          | ... | ... | ... | 77.4                            | 77.6   | 77.5   | 76.2                           | 76.2   | 76.2   |
| MARCH             | ... | ... | ... | 76.9                            | 75.9   | 75.8   | 76.3                           | 76.3   | 76.1   |
| APRIL             | ... | ... | ... | 77.4                            | 77.7   | 77.5   | 76.2                           | 76.3   | 76.9   |
| MAY               | ... | ... | ... | 75.9                            | 76.1   | 75.6   | 76.4                           | 76.5   | 76.4   |
| JUNE              | ... | ... | ... | 74.8                            | 74.9   | 74.7   | 75.7                           | 75.8   | 75.7   |
| JULY              | ... | ... | ... | 73.8                            | 73.7   | 73.5   | 74.7                           | 74.7   | 74.5   |
| AUGUST            | ... | ... | ... | 73.3                            | 73.5   | 73.4   | 74.2                           | 74.3   | 74.1   |
| SEPTEMBER         | ... | ... | ... | 74.8                            | 74.6   | 74.5   | 74.2                           | 74.3   | 74.2   |
| OCTOBER           | ... | ... | ... | 75.6                            | 75.8   | 75.5   | 75.0                           | 74.9   | 74.8   |
| NOVEMBER          | ... | ... | ... | 75.4                            | 76.0   | 76.0   | 75.4                           | 75.5   | 75.4   |
| DECEMBER          | ... | ... | ... | 75.4                            | 75.6   | 75.4   | 75.1                           | 75.2   | 75.1   |
| MEAN FOR YEAR ... |     |     |     | 75.6                            | 75.7   | 75.5   | 75.4                           | 75.5   | 75.4   |

**Statement showing average Hourly Velocity of Wind  
for 1922 between the hours of:—**

| MONTH.            |     |     |     | 9 P.M. TO 7 A.M. | 7 A.M. TO 2 P.M. | 2 P.M. TO 9 P.M. |
|-------------------|-----|-----|-----|------------------|------------------|------------------|
| JANUARY           | ... | ... | ... | 2.6              | 4.0              | 2.4              |
| FEBRUARY          | ... | ... | ... | 2.8              | 4.2              | 3.4              |
| MARCH             | ... | ... | ... | 2.1              | 3.6              | 2.4              |
| APRIL             | ... | ... | ... | 3.0              | 4.3              | 3.0              |
| MAY               | ... | ... | ... | 2.0              | 3.7              | 2.6              |
| JUNE              | ... | ... | ... | 1.8              | 3.4              | 2.1              |
| JULY              | ... | ... | ... | 2.1              | 3.4              | 2.3              |
| AUGUST            | ... | ... | ... | 1.8              | 3.2              | 2.2              |
| SEPTEMBER         | ... | ... | ... | 1.8              | 3.5              | 2.2              |
| OCTOBER           | ... | ... | ... | 2.3              | 3.6              | 2.4              |
| NOVEMBER          | ... | ... | ... | 2.2              | 3.1              | 2.3              |
| DECEMBER          | ... | ... | ... | 1.6              | 2.7              | 2.5              |
| MEAN FOR YEAR ... |     |     |     | 2.2              | 3.6              | 2.5              |

**MASAKA Meteorological Statement for the Year 1922.**

Lat. 0° 21' S.

Long. 31° 47' E.

Height above M.S.L. 4150—4250 feet.

| MONTH.           | 7 A.M.       |              | 2 P.M.       |              | 9 P.M.       |              | Maximum<br>Tempera-<br>ture. | Minimum<br>Tempera-<br>ture. | Rain.          | No. of<br>days rain<br>fell. |
|------------------|--------------|--------------|--------------|--------------|--------------|--------------|------------------------------|------------------------------|----------------|------------------------------|
|                  | Dry<br>Bulb. | Wet<br>Bulb. | Dry<br>Bulb. | Wet<br>Bulb. | Dry<br>Bulb. | Wet<br>Bulb. |                              |                              |                |                              |
|                  | o            | o            | o            | o            | o            | o            | o                            | o                            | In.            |                              |
| JANUARY ...      | 63·8         | 61·9         | 75·9         | 68·9         | 67·1         | 63·8         | 87·9                         | 77·0                         | 1·82           | 8                            |
| FEBRUARY ...     | 63·6         | 61·6         | 76·3         | 67·4         | 66·7         | 63·6         | 89·7                         | 74·9                         | 3·50           | 11                           |
| MARCH ...        | 63·1         | 61·6         | 72·9         | 67·1         | 66·2         | 63·2         | 89·3                         | 75·1                         | 4·15           | 12                           |
| APRIL ...        | 62·8         | 61·3         | 75·9         | 69·2         | 67·4         | 65·5         | 88·1                         | ...*                         | 5·83           | 11                           |
| MAY ...          | 62·8         | 61·0         | 72·9         | 67·3         | 68·3         | 65·1         | 86·7                         | 70·9†                        | 10·48          | 14                           |
| JUNE ...         | 62·1         | 59·9         | 74·6         | 66·5         | 65·8         | 62·9         | 85·1                         | 56·1‡                        | 1·45           | 2                            |
| JULY ...         | 61·5         | 59·2         | 73·1         | 65·4         | 65·5         | 62·2         | 87·6                         | 51·6                         | 2·56           | 4                            |
| AUGUST ...       | 61·8         | 60·6         | 73·4         | 66·9         | 63·0         | 60·9         | 82·5                         | 51·6                         | 1·76           | 7                            |
| SEPTEMBER ...    | 61·7         | 60·5         | 71·9         | 66·4         | 64·9         | 63·0         | 81·7                         | 51·3                         | 4·16           | 9                            |
| OCTOBER ...      | 62·6         | 61·3         | 73·5         | 66·6         | 66·2         | 63·5         | 83·7                         | 51·2                         | 4·14           | 8                            |
| NOVEMBER ...     | 63·2         | 61·8         | 75·5         | 68·9         | 66·0         | 63·3         | 85·2                         | 51·3                         | 3·24           | 8                            |
| DECEMBER ...     | 62·4         | 56·5         | 71·5         | 67·7         | 65·7         | 63·3         | 86·5                         | 51·3                         | 1·85           | 3                            |
| MEAN FOR<br>YEAR | 62·6         | 60·2         | 73·9         | 67·1         | 66·1         | 63·4         | 86·2                         | 60·2                         | TOTAL<br>44·94 | 97                           |

**JINJA Meteorological Statement for the Year 1922.**

Lat. 0° 26' N.

Long. 33° 11' E.

Height above M.S.L. 3722 feet.

| MONTH.           | 7 A.M.       |               | 2 P.M.       |              | 9 P.M.       |              | Maximum<br>Tempera-<br>ture. | Minimum<br>Tempera-<br>ture. | Rain.          | No. of<br>days rain<br>fell. |
|------------------|--------------|---------------|--------------|--------------|--------------|--------------|------------------------------|------------------------------|----------------|------------------------------|
|                  | Dry<br>Bulb. | Wet<br>Bulb.  | Dry<br>Bulb. | Wet<br>Bulb. | Dry<br>Bulb. | Wet<br>Bulb. |                              |                              |                |                              |
|                  |              |               |              |              |              |              | o                            | o                            | In.            |                              |
| JANUARY ...      |              |               |              |              |              |              | 81·6                         | 66·0                         | 1·05           | 6                            |
| FEBRUARY ...     |              |               |              |              |              |              | 79·7                         | 61·0                         | 2·16           | 10                           |
| MARCH ...        |              |               |              |              |              |              | 77·6                         | 54·9                         | 5·44           | 13                           |
| APRIL ...        |              |               |              |              |              |              | 78·9                         | 51·9                         | 6·21           | 14                           |
| MAY ...          |              |               |              |              |              |              | ...*                         | ...*                         | 8·04           | 18                           |
| JUNE ...         |              | Not Available |              |              |              |              | 80·9                         | 61·6                         | 0·85           | 5                            |
| JULY ...         |              |               |              |              |              |              | 80·6                         | 62·6                         | 0·83           | 6                            |
| AUGUST ...       |              |               |              |              |              |              | 80·2                         | 61·2                         | 8·51           | 19                           |
| SEPTEMBER ...    |              |               |              |              |              |              | 82·0                         | 61·6                         | 2·79           | 14                           |
| OCTOBER ...      |              |               |              |              |              |              | 83·2                         | 62·0                         | 3·04           | 15                           |
| NOVEMBER ...     |              |               |              |              |              |              | 84·4                         | 63·2                         | 2·45           | 8                            |
| DECEMBER ...     |              |               |              |              |              |              | 85·1                         | 62·8                         | 2·70           | 11                           |
| MEAN FOR<br>YEAR |              |               |              |              |              |              | 81·3                         | 60·8                         | TOTAL<br>44·07 | 139                          |

**MBARARA Meteorological Statement for the Year 1922.**

Lat. 0° 31' S.

Long. 30° 47' E.

Height above M.S.L. 4500 feet.

| MONTH.        | 7 A.M.       |              | 2 P.M.       |              | 9 P.M.       |              | Maximum<br>Tempera-<br>ture. | Minimum<br>Tempera-<br>ture. | Rain.          | No. of<br>days rain<br>fell. |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|------------------------------|------------------------------|----------------|------------------------------|
|               | Dry<br>Bulb. | Wet<br>Bulb. | Dry<br>Bulb. | Wet<br>Bulb. | Dry<br>Bulb. | Wet<br>Bulb. |                              |                              |                |                              |
|               | o            | o            | o            | o            |              |              | o                            | o                            | In.            |                              |
| JANUARY ...   | 66·4         | 64·6         | 79·8         | 75·3         |              |              | 84·8                         | 71·4†                        | 0·76           | 6                            |
| FEBRUARY ...  | 66·6         | 64·0         | 80·2         | 70·9         |              |              | 83·6                         | 77·8                         | 4·50           | 12                           |
| MARCH ...     | 66·8         | 64·2         | 77·7         | 69·8         |              |              | 81·7                         | 77·7                         | 5·78           | 10                           |
| APRIL ...     | 67·3         | 64·7         | 80·5         | 73·7         |              |              | 83·9                         | ...*                         | 3·39           | 9                            |
| MAY ...       | 65·4         | 62·8         | 75·7         | 69·3         |              |              | 81·2                         | 73·4                         | 5·62           | 9                            |
| JUNE ...      | 65·0         | 61·8         | 80·4         | 70·9         |              |              | 84·6                         | 63·6                         | 0·42           | 1                            |
| JULY ...      | 65·9         | 62·7         | 79·3         | 74·8         |              |              | 83·1                         | 63·8                         | 0·02           | 1                            |
| AUGUST ...    | 64·5         | 62·2         | 74·6         | 70·0         |              |              | 80·5                         | 59·9                         | 7·63           | 18                           |
| SEPTEMBER ... | 65·5         | 63·7         | 76·9         | 74·2         |              |              | 84·4                         | 62·7                         | 4·32           | 12                           |
| OCTOBER ...   | 64·5         | 62·5         | 74·6         | 69·5         |              |              | 78·8                         | 60·5                         | 5·38           | 16                           |
| NOVEMBER ...  | 66·7         | 64·1         | 77·9         | 72·1         |              |              | 82·7                         | 62·3                         | 2·16           | 9                            |
| DECEMBER ...  | 64·6         | 61·9         | 78·6         | 69·3         |              |              | 81·9                         | 61·7                         | 2·46           | 9                            |
| MEAN FOR YEAR | 65·8         | 63·3         | 78·0         | 71·6         |              |              | 82·6                         | 66·8                         | TOTAL<br>42·44 | 114                          |

\*No Records.

† Records for 25 days.

‡ Records for 26 days.



**FORT PORTAL Meteorological Statement for the Year 1922.**

Lat. 0° 48' N.

Long. 30° 8' E.

Height above M.S.L. 5299 feet.

| MONTH.        | 7 A.M.       |              | 2 P.M.       |              | Maximum<br>Tempera-<br>ture. | Minimum<br>Tempera-<br>ture. | Rain. | No. of<br>days<br>rain fell. |
|---------------|--------------|--------------|--------------|--------------|------------------------------|------------------------------|-------|------------------------------|
|               | Dry<br>Bulb. | Wet<br>Bulb. | Dry<br>Bulb. | Wet<br>Bulb. |                              |                              |       |                              |
|               | o            | o            | o            | o            | o                            | o                            | In.   |                              |
| JANUARY       | 60.0         | 57.7         | 78.0         | 76.5         | 79.3                         | 53.5                         | 1.00  | 3                            |
| FEBRUARY      | 59.5         | 57.8         | 75.7         | 66.1         | 80.6                         | 53.3                         | 5.15  | 7                            |
| MARCH         | 61.0         | 59.5         | 71.4         | 66.2         | 77.7                         | 53.6                         | 5.07  | 9                            |
| APRIL         | 62.0         | 60.8         | 73.0         | 69.4         | 76.7                         | 55.1                         | 4.30  | 10                           |
| MAY           | 61.6         | 57.1         | 71.7         | 65.4         | 74.1                         | 54.2                         | 1.64  | 5                            |
| JUNE          | 60.6         | 58.5         | 73.2         | 65.2         | 75.8                         | 52.9                         | 1.18  | 2                            |
| JULY          | 58.9         | 57.3         | 74.4         | 65.9         | 78.6                         | 51.3                         | 0.84  | 2                            |
| AUGUST        | 59.4         | 58.5         | 77.5         | 66.0         | 75.9                         | 52.8                         | 9.10  | 13                           |
| SEPTEMBER     | 58.1         | 56.6         | 71.7         | 67.1         | 76.5                         | 62.5                         | 10.50 | 22                           |
| OCTOBER       | 59.4         | 57.3         | 69.3         | 66.4         | 75.9                         | 53.9                         | 10.71 | 18                           |
| NOVEMBER      | 60.1         | 58.3         | ...          | ...          | 76.1                         | 53.3                         | 4.24  | 11                           |
| DECEMBER      | 56.5         | 55.5         | 74.9         | 66.6         | 79.3                         | 50.9                         | 2.51  | 5                            |
| MEAN FOR YEAR | 59.8         | 57.9         | 72.8         | 67.3         | 77.2                         | 53.9                         | 56.24 | 107                          |

\* No Records.

**GULU Meteorological Statement for the Year 1922.**

Lat. 2° 45' N.

Long. 32° 25' E.

| MONTH.        | 7 A.M.       |              | 2 P.M.       |              | Maximum<br>Tempera-<br>ture. | Minimum<br>Tempera-<br>ture. | Rain. | No. of<br>days<br>rain fell. |
|---------------|--------------|--------------|--------------|--------------|------------------------------|------------------------------|-------|------------------------------|
|               | Dry<br>Bulb. | Wet<br>Bulb. | Dry<br>Bulb. | Wet<br>Bulb. |                              |                              |       |                              |
|               |              | o            | o            | o            | o                            | o                            | In.   |                              |
| JANUARY       | 73.4         | 64.4         | 83.8         | 79.9         | 86.6                         | 62.2                         | 1.42  | 2                            |
| FEBRUARY      | 74.3         | 66.5         | 85.4         | 74.2         | 88.4                         | 62.9                         | 2.03  | 6                            |
| MARCH         | 73.3         | 65.6         | 79.3         | 68.2         | 85.4                         | 61.5                         | 5.06  | 10                           |
| APRIL         | 73.1         | 66.5         | 78.8         | 68.3         | 84.2                         | 59.9                         | 6.20  | 11                           |
| MAY           | 71.4         | 66.8         | 77.9         | 68.8         | 80.2                         | 60.6                         | 10.92 | 19                           |
| JUNE          | 71.7         | 63.5         | 79.7         | 68.8         | 80.2                         | 61.0                         | 7.60  | 11                           |
| JULY          | 69.4         | 66.0         | 76.6         | 68.2         | 78.8                         | 69.6                         | 6.99  | 12                           |
| AUGUST        | 68.4         | 65.9         | 77.4         | 68.4         | 79.1                         | 58.6                         | 7.76  | 11                           |
| SEPTEMBER     | 68.2         | 66.2         | 77.2         | 69.5         | 79.3                         | 57.2                         | 7.18  | 14                           |
| OCTOBER       | 71.9         | 68.2         | 80.1         | 70.3         | 84.8                         | 64.3                         | 5.25  | 12                           |
| NOVEMBER      | 72.5         | 67.3         | 83.7         | 72.5         | 86.3                         | 58.5                         | 1.19  | 3                            |
| DECEMBER      | 71.8         | 65.3         | 83.7         | 72.1         | 88.3                         | 61.9                         | 1.39  | 3                            |
| MEAN FOR YEAR | 71.6         | 66.0         | 80.3         | 70.8         | 84.3                         | 61.5                         | 62.99 | 114                          |

**KAMPALA Meteorological Statement for the Year 1922.**

Lat. 0° 19' N.

Long. 32° 35' E.

Height above M.S.L. 3905 feet.

| MONTH.        | 7 A.M.       |              | 2 P.M.       |              | Maximum<br>Tempera-<br>ture. | Minimum<br>Tempera-<br>ture. | Rain. | No. of<br>days<br>rain fell. |
|---------------|--------------|--------------|--------------|--------------|------------------------------|------------------------------|-------|------------------------------|
|               | Dry<br>Bulb. | Wet<br>Bulb. | Dry<br>Bulb. | Wet<br>Bulb. |                              |                              |       |                              |
|               | o            | o            | o            | o            | o                            | o                            | In.   |                              |
| JANUARY       | 66.5         | 64.7         | 85.0         | 72.3         | 87.6                         | 63.8                         | 2.89  | 9                            |
| FEBRUARY      | 66.4         | 64.8         | 84.8         | 73.0         | 87.2                         | 64.0                         | 3.05  | 17                           |
| MARCH         | 66.1         | 64.5         | 78.8         | 71.4         | 82.6                         | 63.8                         | 4.06  | 18                           |
| APRIL         | 66.2         | 65.2         | 80.6         | 71.5         | 82.2                         | 63.9                         | 4.16  | 18                           |
| MAY           | 66.3         | 64.7         | 75.9         | 70.8         | 77.6                         | 63.5                         | 7.83  | 20                           |
| JUNE          | 65.4         | 63.7         | 75.6         | 70.6         | 77.1                         | 63.6                         | 3.01  | 16                           |
| JULY          | 64.4         | 62.3         | 72.6         | 69.2         | 77.1                         | 63.4                         | 2.94  | 10                           |
| AUGUST        | 64.0         | 62.7         | 75.4         | 72.4         | 77.5                         | 62.4                         | 5.02  | 19                           |
| SEPTEMBER     | 64.8         | 63.2         | 77.8         | 74.4         | 81.3                         | 63.6                         | 2.68  | 16                           |
| OCTOBER       | 65.4         | 64.1         | 78.5         | 74.2         | 83.2                         | 64.4                         | 7.45  | 25                           |
| NOVEMBER      | 66.6         | 65.3         | 82.4         | 78.1         | 86.3                         | 64.2                         | 2.67  | 13                           |
| DECEMBER      | 66.1         | 64.8         | 83.9         | 79.8         | 86.8                         | 63.9                         | 3.47  | 12                           |
| MEAN FOR YEAR | 65.7         | 64.2         | 79.3         | 73.1         | 82.2                         | 63.7                         | 49.23 | 193                          |

**NAGICHOT Meteorological Statement for the Year 1922.**

| MONTH.             |     |     |     |     | Maximum<br>Tempera-<br>ture. | Minimum<br>Tempera-<br>ture. | Rain.          | No. of days rain fell. |
|--------------------|-----|-----|-----|-----|------------------------------|------------------------------|----------------|------------------------|
| JANUARY            | ... | ... | ... | ... | —                            | —                            | —              | —                      |
| FEBRUARY           | ... | ... | ... | ... | —                            | —                            | —              | —                      |
| MARCH              | ... | ... | ... | ... | —                            | —                            | —              | —                      |
| APRIL              | ... | ... | ... | ... | 72·6§                        | 60·6§                        | 4·42§          | 9§                     |
| MAY                | ... | ... | ... | ... | 68·9                         | 58·9                         | 5·48           | 17                     |
| JUNE               | ... | ... | ... | ... | 69·0                         | 58·3                         | 8·86           | 14                     |
| JULY               | ... | ... | ... | ... | 67·9                         | 57·0                         | 8·00           | 18                     |
| AUGUST             | ... | ... | ... | ... | 65·6                         | 56·7                         | 8·63           | 17                     |
| SEPTEMBER          | ... | ... | ... | ... | 65·9†                        | 56·6†                        | 3·44           | 9                      |
| OCTOBER            | ... | ... | ... | ... | 70·6‡                        | 58·5‡                        | 0·92‡          | 5‡                     |
| NOVEMBER           | ... | ... | ... | ... | 74·9                         | 59·3                         | 0·08           | 1                      |
| DECEMBER           | ... | ... | ... | ... | 74·0                         | 58·3                         | 0·15           | 3                      |
| MEAN FOR THE YEAR. |     |     |     |     | 69·9                         | 58·1                         | TOTAL<br>39·98 | 93                     |

Observations  
started  
in April.

**BOMBO Meteorological Statement for the Year 1922.**

| MONTH.        |     |     |     |     | 9 A.M.       |              | Maximum<br>Tempera-<br>ture. | Minimum<br>Tempera-<br>ture. | Rain.          | No. of<br>days rain<br>fell. |
|---------------|-----|-----|-----|-----|--------------|--------------|------------------------------|------------------------------|----------------|------------------------------|
|               |     |     |     |     | Dry<br>Bulb. | Wet<br>Bulb. |                              |                              |                |                              |
| JANUARY       | ... | ... | ... | ... | ...          | ...          | 85·1                         | 63·4                         | 1·30           | 7                            |
| FEBRUARY      | ... | ... | ... | ... | ...          | ...          | 85·2                         | 62·8                         | 3·71           | 12                           |
| MARCH         | ... | ... | ... | ... | 68·9         | 63·9         | 81·2                         | 63·6                         | 8·55           | 15                           |
| APRIL         | ... | ... | ... | ... | 71·3         | 69·9         | 82·5                         | 62·9                         | 3·53           | 14                           |
| MAY           | ... | ... | ... | ... | ...          | ...          | 68·9                         | 58·9                         | 5·48           | 17                           |
| JUNE          | ... | ... | ... | ... | 69·3         | 65·7         | 78·9                         | 61·5                         | 1·24           | 12                           |
| JULY          | ... | ... | ... | ... | 68·1         | 64·3         | 79·7                         | 60·8                         | 3·94           | 5                            |
| AUGUST        | ... | ... | ... | ... | 66·6         | 64·4         | 78·2                         | 60·8                         | 6·96           | 19                           |
| SEPTEMBER     | ... | ... | ... | ... | 69·4         | 66·4         | 78·9                         | 60·9                         | 4·70           | 15                           |
| OCTOBER       | ... | ... | ... | ... | 69·7         | 66·5         | 80·5                         | 61·6                         | 5·31           | 20                           |
| NOVEMBER      | ... | ... | ... | ... | 69·9         | 67·1         | 79·7                         | 62·3                         | 4·69           | 10                           |
| DECEMBER      | ... | ... | ... | ... | 69·8         | 67·1         | 81·9                         | 61·4                         | 4·46           | 10                           |
| MEAN FOR YEAR |     |     |     |     | 69·2         | 66·1         | 80·1                         | 61·7                         | TOTAL<br>53·87 | 156                          |

**MUBENDE Meteorological Statement for the Year 1922.**

Lat. 0° 30' 26" N.

Long. 31° 22' 22" E.

Height above M.S.L. 5121 feet.

| MONTH.           | 7 A.M.       |              | 2 P.M.       |              | 9 P.M.       |              | Maximum<br>Tempera-<br>ture. | Minimum<br>Tempera-<br>ture. | Rain.          | No. of<br>days<br>rain fell. |
|------------------|--------------|--------------|--------------|--------------|--------------|--------------|------------------------------|------------------------------|----------------|------------------------------|
|                  | Dry<br>Bulb. | Wet<br>Bulb. | Dry<br>Bulb. | Wet<br>Bulb. | Dry<br>Bulb. | Wet<br>Bulb. |                              |                              |                |                              |
| JANUARY          | 65·4         | 61·9         | 77·5         | 66·7         | 67·8         | 63·4         | 80·3                         | 61·1                         | 0·63           | 3                            |
| FEBRUARY         | 64·6         | 60·6         | 78·1         | 66·2         | 67·8         | 64·8         | 81·2                         | 59·4                         | 2·76           | 12                           |
| MARCH            | 64·5         | 60·8         | 74·5         | 67·0         | 66·7         | 62·1         | 78·4                         | 59·7                         | 5·12           | 9                            |
| APRIL            | 64·5         | 61·9         | 78·1         | 69·0         | 66·2         | 62·7         | 80·7                         | 60·7                         | 3·76           | 9                            |
| MAY              | 63·0         | 60·6         | 74·9         | 67·3         | 64·5         | 61·5         | 78·2                         | 59·5                         | 4·68           | 16                           |
| JUNE             | 63·3         | 60·6         | 76·4         | 66·8         | 64·4         | 61·1         | 79·4                         | 59·6¶                        | 1·41           | 5                            |
| JULY             | 62·5         | 57·9         | 77·7         | 65·5         | 64·0         | 59·9         | 78·3                         | 57·1                         | 0·87           | 4                            |
| AUGUST           | 62·2         | 59·9         | 70·9         | 65·7         | 63·5         | 60·9         | 73·3                         | 55·5                         | 8·06           | 13                           |
| SEPTEMBER        | 62·2         | 59·8         | 71·9         | 66·9         | 64·1         | 61·3         | 77·5                         | 58·3                         | 2·85           | 9                            |
| OCTOBER          | 62·6         | 60·8         | 71·8         | 68·3         | 64·5         | 62·2         | 76·0                         | 62·4                         | 8·60           | 18                           |
| NOVEMBER         | 64·2         | 61·8         | 77·3         | 69·5         | 65·4         | 62·9         | 78·9                         | 61·2                         | 3·58           | 6                            |
| DECEMBER         | 63·9         | 61·2         | 77·2         | 69·5         | 65·5         | 63·2         | 79·0                         | 60·3                         | 1·10           | 2                            |
| MEAN FOR<br>YEAR | 63·6         | 60·6         | 75·5         | 67·4         | 65·4         | 62·2         | 78·5                         | 59·6                         | TOTAL<br>43·42 | 106                          |

\* No records. § Records for 24 days. † Records for 16 days. ‡ Records for 11 days. ¶ Record for 19 days.

**MASINDI Meteorological Statement for the Year 1922.**

Lat. 1° 40' N.

Long. 31° 50' E.

Height above M.S.L. 3764 feet.

| MONTH.        | Maximum<br>Temperature. | Minimum<br>Temperature. | Rain. | No. of days<br>rain fell. |
|---------------|-------------------------|-------------------------|-------|---------------------------|
|               | °                       | °                       | In.   |                           |
| JANUARY       | 88.0                    | 57.0                    | 0.32  | 2                         |
| FEBRUARY      | 88.4                    | 60.2                    | 2.20  | 8                         |
| MARCH         | 86.8                    | 61.0                    | 5.45  | 12                        |
| APRIL         | 89.8                    | 62.0                    | 7.85  | 15                        |
| MAY           | 87.5                    | 60.3                    | 9.14  | 17                        |
| JUNE          | 87.9                    | 59.6                    | 2.15  | 8                         |
| JULY          | 89.1                    | 59.6                    | 3.45  | 10                        |
| AUGUST        | 88.6                    | 58.6                    | 10.95 | 15                        |
| SEPTEMBER     | 87.1                    | 58.0                    | 4.61  | 14                        |
| OCTOBER       | 83.1                    | 58.2                    | 7.01  | 22                        |
| NOVEMBER      | 85.1                    | 51.8                    | 1.76  | 4                         |
| DECEMBER      | 88.9                    | 52.8                    | 1.36  | 5                         |
| MEAN FOR YEAR | 87.5                    | 58.3                    | 56.25 | 132                       |
| TOTAL         |                         |                         |       |                           |

**SERERE Meteorological Statement for the Year 1922.**

Lat. 1° 31' N. Long. 33° 27' E. Height above M.S.L. 3600 feet.

| MONTH.           | Maximum<br>Tempera-<br>ture. | Minimum<br>Tempera-<br>ture. | Rain.          | Number of<br>days rain<br>fell. |
|------------------|------------------------------|------------------------------|----------------|---------------------------------|
|                  | °                            | °                            | In.            |                                 |
| JANUARY...       | 90.2                         | 70.7                         | 0.20           | 1                               |
| FEBRUARY         | 88.4                         | 67.6                         | 3.20           | 13                              |
| MARCH ...        | 85.3                         | 67.8                         | 6.63           | 15                              |
| APRIL ..         | 83.8                         | 65.6                         | 3.78           | 12                              |
| MAY ...          | 81.6                         | 61.7                         | 4.82           | 13                              |
| JUNE ...         | 81.4                         | 65.8                         | 6.91           | 10                              |
| JULY ...         | 80.5                         | 65.2                         | 2.64           | 13                              |
| AUGUST ...       | 80.7                         | 64.1                         | 9.27           | 14                              |
| SEPT. ...        | 83.8                         | 64.7                         | 4.04           | 17                              |
| OCTOBER...       | 85.7                         | 65.3                         | 8.61           | 14                              |
| NOVEMBER         | 89.7                         | 66.2                         | 2.85           | 4                               |
| DECEMBER         | 88.9                         | 65.3                         | 1.50           | 4                               |
| MEAN FOR<br>YEAR | 85.0                         | 65.9                         | TOTAL<br>54.45 | 130                             |

**BUKALASA Meteorological Statement for the Year 1922.**

Lat. 0° 43' N. Long. 32° 30' E. Height above M.S.L. 3700 feet.

| MONTH.           | Maximum<br>Tempera-<br>ture. | Minimum<br>Tempera-<br>ture. | Rain.          | Number of<br>days rain<br>fell |
|------------------|------------------------------|------------------------------|----------------|--------------------------------|
|                  | °                            | °                            | In.            |                                |
| JANUARY          | 87.6                         | 64.2                         | 0.48           | 5                              |
| FEBRUARY         | 88.5                         | 64.4                         | 1.96           | 10                             |
| MARCH ...        | 86.8                         | 64.6                         | 6.27           | 16                             |
| APRIL ...        | 87.7                         | 64.8                         | 6.45           | 15                             |
| MAY ...          | 84.1                         | 63.3                         | 7.01           | 23                             |
| JUNE ...         | 81.2                         | 61.5                         | 2.07           | 9                              |
| JULY ...         | 81.9                         | 61.2                         | 1.59           | 6                              |
| AUGUST ...       | 80.5                         | 60.9                         | 7.23           | 17                             |
| SEPT. ...        | 83.3                         | 61.8                         | 5.36           | 18                             |
| OCTOBER...       | 84.2                         | 63.1                         | 4.97           | 20                             |
| NOVEMBER         | 86.7                         | 62.5                         | 3.59           | 11                             |
| DECEMBER         | 85.4                         | 62.2                         | 1.92           | 10                             |
| MEAN FOR<br>YEAR | 84.8                         | 62.9                         | TOTAL<br>48.90 | 160                            |



**Comparative Rainfall Statement, showing the Monthly Rainfall for the Year 1922, of Forty-five Localities of the Uganda Protectorate.**

| MONTH     | Entebbe. |             | Jinja. |             | Fort Portal. |             | Masaka. |             | Mbarara. |             | Masindi. |             | Gulu. |             | Mubende. |             | Budo.      |             | Butiaba. |             | Mbale. |             | Kampala. |             |
|-----------|----------|-------------|--------|-------------|--------------|-------------|---------|-------------|----------|-------------|----------|-------------|-------|-------------|----------|-------------|------------|-------------|----------|-------------|--------|-------------|----------|-------------|
|           | In.      | No. of days | In.    | No. of days | In.          | No. of days | In.     | No. of days | In.      | No. of days | In.      | No. of days | In.   | No. of days | In.      | No. of days | In.        | No. of days | In.      | No. of days | In.    | No. of days | In.      | No. of days |
| ...       | 2'28     | 11          | 1'05   | 6           | 1'00         | 3           | 1'82    | 7           | 0'76     | 6           | 0'32     | 2           | 1'42  | 2           | 0'63     | 3           | No records | 0'85        | 1        | 0'40        | —      | 2'89        | 9        |             |
| JANUARY   | 3'16     | 13          | 2'16   | 10          | 5'15         | 7           | 3'50    | 11          | 4'50     | 12          | 2'20     | 8           | 2'03  | 6           | 2'76     | 12          | 3'01       | 7           | 1'30     | 3           | 2'51   | 17          |          |             |
| FEBRUARY  | 8'05     | 17          | 5'44   | 13          | 5'07         | 9           | 4'15    | 12          | 5'78     | 11          | 5'45     | 12          | 5'06  | 10          | 5'12     | 9           | 3'22       | 14          | 4'48     | 7           | 3'57   | 18          |          |             |
| MARCH     | 7'40     | 13          | 6'21   | 14          | 4'30         | 10          | 5'83    | 11          | 3'39     | 9           | 7'85     | 15          | 6'20  | 11          | 8'76     | 9           | 3'85       | 13          | 4'25     | 10          | 5'56   | 18          |          |             |
| APRIL     | ...      | ...         | ...    | ...         | ...          | ...         | ...     | ...         | ...      | ...         | ...      | ...         | ...   | ...         | ...      | ...         | ...        | ...         | ...      | ...         | ...    | ...         |          |             |
| MAY       | 12'10    | 22          | 8'04   | 17          | 1'64         | 5           | 10'48   | 14          | 5'62     | 9           | 9'14     | 17          | 10'92 | 19          | 4'68     | 16          | 5'96       | 17          | 3'30     | 8           | 9'42   | 20          |          |             |
| JUNE      | 3'27     | 10          | 0'85   | 5           | 1'18         | 2           | 2'45    | 2           | 0'42     | 1           | 2'15     | 8           | 7'60  | 11          | 1'41     | 5           | 3'35       | 7           | 1'96     | 9           | 3'01   | 16          |          |             |
| JULY      | 2'95     | 9           | 0'83   | 6           | 0'84         | 2           | 2'56    | 4           | 0'02     | 1           | 3'45     | 10          | 6'99  | 12          | 0'87     | 4           | 0'77       | 3           | 1'00     | 2           | 3'59   | 11          |          |             |
| AUGUST    | 3'10     | 16          | 8'51   | 19          | 9'10         | 13          | 1'76    | 7           | 7'63     | 17          | 10'95    | 15          | 7'76  | 11          | 8'05     | 13          | 3'34       | 11          | 6'72     | 8           | 14'02  | 13          |          |             |
| SEPTEMBER | 1'34     | 9           | 2'79   | 14          | 10'50        | 22          | 4'16    | 9           | 4'32     | 12          | 4'61     | 14          | 7'15  | 13          | 2'85     | 13          | 7'20       | 12          | 2'92     | 7           | 1'64   | 9           |          |             |
| OCTOBER   | 3'30     | 14          | 3'04   | 15          | 10'71        | 18          | 4'14    | 8           | 5'38     | 16          | 7'01     | 22          | 5'25  | 12          | 8'60     | 18          | 3'45       | 14          | 4'20     | 8           | 2'63   | 7           |          |             |
| NOVEMBER  | 5'32     | 8           | 2'45   | 8           | 4'24         | 11          | 3'24    | 8           | 2'16     | 9           | 1'76     | 4           | 1'19  | 3           | 3'58     | 6           | 2'20       | 9           | —        | —           | 2'11   | 3           |          |             |
| DECEMBER  | 4'37     | 12          | 2'70   | 11          | 2'51         | 5           | 1'85    | 3           | 2'46     | 9           | 1'36     | 5           | 1'39  | 3           | 1'10     | 2           | No records | 1'40        | 3        | 0'73        | 3      | 3'47        | 12       |             |
| TOTAL     | 56'94    | 154         | 44'07  | 138         | 56'24        | 104         | 44'94   | 96          | 42'44    | 112         | 56'25    | 132         | 62'96 | 113         | 43'42    | 106         | 36'36      | 107         | 32'38    | 60          | 48'91  | 78          | 49'23    | 193         |

| MONTH     | Kakumiro. |             | Lira. |             | Soroti.    |             | Hoima. |             | Namuokeera. |             | Butiti. |             | Bukumi. |             | Rubaga. |             | Ngora. |             | Kisubi.    |             | Kivuvu.    |             |
|-----------|-----------|-------------|-------|-------------|------------|-------------|--------|-------------|-------------|-------------|---------|-------------|---------|-------------|---------|-------------|--------|-------------|------------|-------------|------------|-------------|
|           | In.       | No. of days | In.   | No. of days | In.        | No. of days | In.    | No. of days | In.         | No. of days | In.     | No. of days | In.     | No. of days | In.     | No. of days | In.    | No. of days | In.        | No. of days | In.        | No. of days |
| JANUARY   | 1'89      | 6           | 0'26  | 1           | 0'82       | 1           | 1'17   | 6           | —           | —           | 0'67    | 3           | 1'87    | 4           | 2'23    | 2           | 0'26   | 1           | 2'06       | 2           | No records | —           |
| FEBRUARY  | 2'88      | 11          | 1'36  | 5           | 3'61       | 5           | 4'31   | 9           | 5'62        | 11          | 3'44    | 10          | 4'19    | 4           | 3'14    | 5           | 2'43   | 6           | 3'50       | 6           | 9'20       | —           |
| MARCH     | 6'46      | 14          | 7'68  | 12          | 5'15       | 9           | 5'23   | 11          | 4'69        | 8           | 5'11    | 12          | 7'17    | 8           | 4'03    | 10          | 6'18   | 10          | 10'29      | 10          | No records | —           |
| APRIL     | 4'05      | 13          | 6'57  | 13          | 5'78       | 17          | 5'23   | 13          | 8'11        | 15          | 2'73    | 8           | 2'41    | 6           | 3'99    | 13          | 3'13   | 15          | 7'18       | 9           | No records | —           |
| MAY       | 4'36      | 16          | 8'20  | 15          | 8'04       | 16          | 8'58   | 9           | 4'78        | 11          | 4'29    | 12          | 3'01    | 7           | 7'18    | 11          | 9'39   | 17          | No records | —           | No records | —           |
| JUNE      | 4'28      | 11          | 5'00  | 8           | 8'11       | 8           | 1'79   | 8           | 0'86        | 2           | 3'11    | 4           | 3'61    | 6           | 1'50    | 4           | 2'81   | 10          | No records | —           | No records | —           |
| JULY      | 1'09      | 7           | 4'18  | 10          | 2'80       | 4           | 4'00   | 11          | 0'40        | 3           | 1'75    | 4           | 1'48    | 5           | 0'71    | 3           | 4'52   | 10          | No records | —           | No records | —           |
| AUGUST    | 7'62      | 22          | 11'63 | 11          | 10'55      | 16          | 9'15   | 16          | 8'62        | 19          | 8'65    | 17          | 11'88   | 18          | 4'35    | 11          | 14'96  | 15          | No records | —           | No records | —           |
| SEPTEMBER | 5'90      | 20          | 4'34  | 9           | 2'97       | 8           | 9'15   | 18          | 1'63        | 7           | 9'56    | 20          | 5'34    | 13          | 3'61    | 6           | 6'06   | 12          | No records | —           | 7'08       | 14          |
| OCTOBER   | 8'23      | 24          | 4'96  | 10          | 4'58       | 9           | 7'91   | 21          | 5'66        | 15          | 6'39    | 21          | 8'66    | 16          | 6'45    | 10          | 2'40   | 12          | No records | —           | 5'08       | 18          |
| NOVEMBER  | 1'31      | 4           | 1'32  | 4           | 1'32       | 4           | 4'45   | 11          | 2'58        | 10          | 2'81    | 12          | 2'93    | 6           | 5'09    | 6           | 0'72   | 3           | No records | —           | 2'80       | 11          |
| DECEMBER  | 4'18      | 3           | 1'16  | 3           | No records | 4           | 2'41   | 8           | 1'92        | 2           | 4'75    | 12          | 2'56    | 7           | 4'19    | 6           | 1'02   | 4           | 7'13       | 7           | 6'00       | 7           |
| TOTAL     | 52'33     | 165         | 56'65 | 101         | 53'73      | 97          | 63'38  | 141         | 44'87       | 101         | 53'76   | 135         | 55'11   | 110         | 46'47   | 87          | 54'18  | 114         | 30'16      | 34          | 30'16      | 50          |



COMPARATIVE RAINFALL STATEMENT, SHOWING THE MONTHLY RAINFALL FOR THE YEAR 1922,  
OF FORTY-FIVE LOCALITIES OF THE UGANDA PROTECTORATE—continued.

| MONTH     | Mairye. |             | Nandere. |             | Moniko. |             | Bwavu. |             | Bunyaru-guru. |             | Katigondo. |             | Masindi Port. |             | Kitgum. |             | Kilchooney. |             | Namasagali. |             | Hoima River Estate. |             | Nyondo. |             | Mutai. |             |
|-----------|---------|-------------|----------|-------------|---------|-------------|--------|-------------|---------------|-------------|------------|-------------|---------------|-------------|---------|-------------|-------------|-------------|-------------|-------------|---------------------|-------------|---------|-------------|--------|-------------|
|           | In.     | No. of days | In.      | No. of days | In.     | No. of days | In.    | No. of days | In.           | No. of days | In.        | No. of days | In.           | No. of days | In.     | No. of days | In.         | No. of days | In.         | No. of days | In.                 | No. of days | In.     | No. of days | In.    | No. of days |
| JANUARY   | 0'60    | 4           | 1'10     | 4           | 0'97    | 3           | 2'73   | 6           | 1'13          | 2           | 0'91       | 7           | 1'71          | 3           | 0'47    | 2           | 1'26        | 6           | 4'62        | 4           | 0'74                | 5           | 1'21    | 3           | 1'77   | 4           |
| FEBRUARY  | 3'38    | 12          | 2'16     | 7           | 5'40    | 7           | 4'91   | 11          | 4'83          | 4           | 3'73       | 6           | 1'49          | 4           | 0'92    | 5           | 3'07        | 12          | 2'41        | 8           | 2'97                | 8           | 5'55    | 12          | 2'78   | 4           |
| MARCH     | 5'53    | 17          | 8'81     | 10          | 3'10    | 8           | 7'83   | 18          | 5'90          | 9           | 4'66       | 15          | 4'59          | 10          | 5'61    | 11          | 6'41        | 18          | 3'12        | 8           | 4'80                | 12          | 6'36    | 10          | 4'81   | 10          |
| APRIL     | 3'36    | 14          | 4'24     | 7           | 7'03    | 12          | 7'82   | 16          | 5'63          | 7           | 4'94       | 11          | 3'28          | 8           | 1'27    | 6           | 4'21        | 16          | 6'30        | 13          | 5'38                | 18          | 8'96    | 20          | 7'40   | 7           |
| MAY       | 5'09    | 10          | 6'07     | 7           | 2'62    | 7           | 5'21   | 19          | 4'04          | 4           | 1'10       | 15          | 4'63          | 11          | 10'40   | 20          | 4'94        | 16          | 4'48        | 11          | 6'44                | 9           | 4'23    | 14          | 7'13   | 7           |
| JUNE      | 2'29    | 5           | 1'34     | 3           | 0'40    | 3           | 1'14   | 6           | 2'20          | 5           | 0'61       | 2           | 2'99          | 7           | 3'65    | 10          | 0'65        | 6           | 1'83        | 10          | 1'37                | 10          | 4'67    | 11          | 4'27   | 3           |
| JULY      | 1'55    | 5           | 1'63     | 3           | 0'81    | 2           | 2'22   | 14          | 0'21          | 1           | 0'30       | 3           | 3'31          | 5           | 4'67    | 14          | 1'36        | 6           | 0'86        | 3           | 3'21                | 11          | 3'03    | 12          | 1'24   | 3           |
| AUGUST    | 6'89    | 11          | 6'47     | 9           | 6'40    | 6           | 3'93   | 17          | 5'41          | 11          | 2'65       | 8           | 5'45          | 13          | 4'12    | 17          | 7'90        | 23          | 3'97        | 17          | 6'35                | 17          | 4'79    | 12          | 4'29   | 8           |
| SEPTEMBER | 3'91    | 12          | 4'40     | 8           | 7'28    | 10          | 5'15   | 20          | 6'98          | 18          | 2'51       | 11          | 5'89          | 15          | 4'04    | 9           | 11'40       | 21          | 3'75        | 9           | 7'39                | 21          | 2'66    | 16          | 3'91   | 5           |
| OCTOBER   | 6'67    | 10          | 2'97     | 12          | 4'50    | 8           | 3'84   | 17          | 6'98          | 18          | 2'51       | 11          | 1'17          | 3           | 5'86    | 14          | 10'84       | 29          | 7'97        | 18          | 10'17               | 24          | 2'74    | 15          | 3'02   | 6           |
| NOVEMBER  | 4'18    | 9           | 3'25     | 6           | 2'62    | 7           | 7'15   | 14          | 2'35          | 11          | 1'46       | 6           | 0'73          | 5           | 0'60    | 4           | 3'48        | 18          | 1'85        | 10          | 2'40                | 7           | 2'16    | 5           | 1'58   | 3           |
| DECEMBER  | 3'56    | 5           | 2'98     | 7           | 2'72    | 5           | 4'28   | 12          | 2'91          | 10          | 3'53       | 9           | 0'73          | 5           | 1'81    | 3           | 3'99        | 12          | 2'37        | 7           | 3'16                | 7           | 1'89    | 6           | 0'65   | 1           |
| TOTAL     | 46'95   | 114         | 45'42    | 83          | 43'85   | 78          | 56'22  | 180         | 51'27         | 98          | 40'39      | 106         | 40'62         | 97          | 43'12   | 115         | 59'51       | 183         | 43'03       | 116         | 54'38               | 149         | 48'25   | 136         | 42'85  | 61          |

| MONTH     | Nsambya. |             | Bugondo. |             | Lale. |             | Kabale. |             | Buye.      |             | Serere. |             | Bukalasa. |             | Bombo. |             | Nagichot. |             |
|-----------|----------|-------------|----------|-------------|-------|-------------|---------|-------------|------------|-------------|---------|-------------|-----------|-------------|--------|-------------|-----------|-------------|
|           | In.      | No. of days | In.      | No. of days | In.   | No. of days | In.     | No. of days | In.        | No. of days | In.     | No. of days | In.       | No. of days | In.    | No. of days | In.       | No. of days |
| JANUARY   | 3'14     | 6           | 3'15     | 4           | 0'49  | 3           | 1'66    | 6           | 2'11       | 7           | 0'20    | 1           | 0'48      | 5           | 1'30   | 7           | —         | —           |
| FEBRUARY  | 2'66     | 17          | 3'48     | 4           | 3'33  | 8           | 2'39    | 10          | 3'67       | 15          | 3'20    | 13          | 1'96      | 10          | 3'71   | 12          | —         | —           |
| MARCH     | 5'07     | 13          | 6'56     | 11          | 5'68  | 9           | 4'21    | 11          | 2'63       | 17          | 6'63    | 15          | 6'27      | 16          | 8'55   | 15          | —         | —           |
| APRIL     | 4'43     | 12          | 3'40     | 10          | 6'95  | 12          | 2'56    | 8           | 6'33       | 13          | 3'78    | 12          | 6'45      | 15          | 3'53   | 14          | 4'42      | 9           |
| MAY       | 6'88     | 17          | 5'09     | 12          | 6'63  | 12          | 1'76    | 9           | 2'55       | 16          | 4'82    | 13          | 7'01      | 23          | 5'07   | 17          | 5'48      | 4           |
| JUNE      | 2'98     | 8           | 2'54     | 6           | 6'11  | 9           | 0'10    | 1           | 0'37       | 6           | 6'91    | 10          | 2'07      | 9           | 1'24   | 12          | 8'86      | 14          |
| JULY      | 1'61     | 8           | 3'56     | 5           | 1'70  | 6           | —       | —           | 0'88       | 5           | 2'64    | 13          | 1'59      | 6           | 3'94   | 5           | 8'00      | 18          |
| AUGUST    | 4'77     | 12          | 5'98     | 8           | 8'57  | 9           | 7'22    | 15          | 13'65      | 21          | 9'27    | 14          | 7'23      | 17          | 6'96   | 19          | 8'63      | 17          |
| SEPTEMBER | 2'56     | 17          | 3'54     | 9           | 4'99  | 10          | 6'54    | 12          | 7'64       | 19          | 4'04    | 17          | 5'36      | 18          | 4'70   | 16          | 3'44      | 9           |
| OCTOBER   | 6'21     | 16          | 5'48     | 11          | 7'80  | 11          | 4'69    | 8           | 5'01       | 14          | 8'61    | 14          | 4'97      | 20          | 5'31   | 20          | 0'92      | 5           |
| NOVEMBER  | 4'57     | 14          | 3'00     | 4           | 0'56  | 1           | 3'29    | 7           | 1'48       | 8           | 2'85    | 4           | 3'59      | 11          | 4'69   | 10          | 0'08      | 1           |
| DECEMBER  | 2'38     | 12          | 0'36     | 1           | 0'90  | 3           | 5'65    | 10          | No records | 4           | 1'50    | 4           | 1'92      | 10          | 4'46   | 10          | 0'15      | 3           |
| TOTAL     | 47'26    | 152         | 46'14    | 85          | 53'71 | 93          | 40'07   | 97          | 47'32      | 141         | 54'45   | 130         | 48'90     | 160         | 53'43  | 157         | 39'98     | 80          |



**Statement showing Situations and Latitudes, Longitudes and Heights  
of the Meteorological Stations of the Uganda Protectorate.**

| <i>Station.</i>    | <i>Situation.</i> | <i>Latitude.</i> | <i>Longitude.</i> | <i>Height in feet above Mean Sea Level.</i> |
|--------------------|-------------------|------------------|-------------------|---------------------------------------------|
| Bombo              | Buganda Province  | 0°34'30"N.       | 32°32' E.         | 4040                                        |
| Budo               | " "               | 0°16' N.         | 32°29' E.         | 4200—4300                                   |
| Bugondo            | Eastern "         | 1°37' N.         | 33°17' E.         | 3500                                        |
| Bukalasa           | Buganda "         | 0°43' N.         | 32°30' E.         | 3700                                        |
| Bukumi             | " "               | 0°49' N.         | 31°22' E.         | 4200                                        |
| Bunyaruguru        | Western "         | 0°14' S.         | 30°00' E.         | 3200                                        |
| Butiaba            | Northern "        | 1°50' N.         | 31°20' E.         | 2025                                        |
| Butiti             | Western "         | 0°39' N.         | 30°32' E.         | —                                           |
| Buye               | Buganda "         | 0°12' N.         | 32°00' E.         | 4270                                        |
| Bwavu              | " "               | 0°21' N.         | 33° 1' E.         | 4200 (Approx.)                              |
| Entebbe            | " "               | 0° 4' 31" N.     | 32°28' 30" E.     | 3842                                        |
| Fort Portal        | Western "         | 0°43' N.         | 30° 8' E.         | 5299                                        |
| Gulu               | Northern "        | 2°45' N.         | 32°25' E.         | —                                           |
| Hoima              | " "               | 1°30' N.         | 31°30' E.         | 3801                                        |
| Hoima River Estate | " "               | 1°30' N.         | 31°21' E.         | 4000                                        |
| Jinja              | Eastern "         | 0°26' N.         | 33°11' E.         | 3722                                        |
| Kabale             | Western "         | 1°15' S.         | 29°59' 28" E.     | —                                           |
| Kakumiro           | Buganda "         | 0°46' N.         | 31°18' E.         | 4511                                        |
| Kampala            | " "               | 0°19' N.         | 32°35' E.         | 3905                                        |
| Katigondo          | " "               | 0°13' S.         | 31°44' E.         | 4290                                        |
| Kilclooney         | Western "         | 0°30' N.         | 30°20' E.         | —                                           |
| Kitgum             | Eastern "         | 3°20' N.         | 32°55' E.         | —                                           |
| Kisubi             | Buganda "         | 0°10' N.         | 32°33' E.         | 3850                                        |
| Kivuvu             | " "               | 0°23' N.         | 32°47' E.         | 3600—3700                                   |
| Lale               | Eastern "         | 1°42' N.         | 33°28' E.         | —                                           |
| Lira               | " "               | 2°15' N.         | 32°55' E.         | —                                           |
| Magigye            | Buganda "         | 0°29' N.         | 32°36' E.         | 3900                                        |
| Masaka             | " "               | 0°21' S.         | 31°47' E.         | 4150—4250                                   |
| Masindi            | Northern "        | 1°40' N.         | 31°50' E.         | 3764                                        |
| Masindi Port       | " "               | 1°42' N.         | 32°05' E.         | 3360                                        |
| Moniko             | Buganda "         | 0°23' N.         | 32°55' E.         | 4100                                        |
| Mubende            | " "               | 0°30'26"N.       | 31°22' 22" E.     | 5121                                        |
| Mutai              | Eastern "         | 0°34' N.         | 33°14' E.         | 3600                                        |
| Mbale              | " "               | 1° 2' N.         | 43° 6' E.         | —                                           |
| Mbarara            | Western "         | 0°31' S.         | 30°47' E.         | 4500                                        |
| Nagichot           | Sudan "           | 4°17' N.         | 33°32' E.         | 6300                                        |
| Namasagali         | Eastern "         | 1°00' N.         | 32°57' E.         | 3400                                        |
| Namukekera         | Buganda "         | 0°41' N.         | 32°14' E.         | 3700                                        |
| Nandere            | " "               | 0°38' N.         | 32°30' E.         | 3900 (Approx.)                              |
| Ngora              | Eastern "         | 1°28' N.         | 33°48' E.         | —                                           |
| Nsambya            | Buganda "         | 0°18' N.         | 32°34' E.         | 4020                                        |
| Nyondo             | Eastern "         | 1° 1' N.         | 34°14' E.         | —                                           |
| Rubaga             | Buganda "         | 0°18' N.         | 32°33' E.         | 4135                                        |
| Serere             | Eastern "         | 1°31' N.         | 32°27' E.         | 3600                                        |
| Soroti             | " "               | 1°43' N.         | 33°37' E.         | 3690                                        |



